CITY REGIONS OF THE PEOPLE'S REPUBLIC OF CHINA 1949-1959

by

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To my three children:

Michelle, Angela and Mark

City Regions of the People's Republic of China 1949-1959

Ka-iu Fung

ABSTRACT

In contrast with the stagnation in city planning and development during the Nationalist regime, industrial urbanization began to accelerate soon after the Chinese Communist Party came to power in 1949. The central authorities promulgated the Suburban Agrarian Reform Law for acquiring and reserving land in designated suburban areas for future development. This law laid the foundation for China's long-term urban and suburban planning. However, throughout the First Five Year Plan period (1953-1957), many "key-point" industrial centres spread chaotically into the surrounding countryside. This was mainly attributed to legislative weaknesses in land allocation for capital construction and unplanned, or at best, improperly planned urban development, arising from indiscriminate emulation of Soviet model of city planning and development.

One of the most serious consequences of urban sprawl was the extensive displacement of urban fringe agriculture, leading to acute shortage of vegetable supply in many large cities. To limit excessive expansion of cities in order to conserve valuable suburban farm land and to promote self-sufficiency in vegetable supply in the cities, a variety of remedial measures was introduced.

The beginning of 1958 witnessed the institutionalisation of the urban-centred planning unit - the city region. Under this unified planning agency, the functions of the municipal authorities of the central city were centralized. The agricultural land use in the suburban districts was restructured. The urban population and economic activities were dispersed to the self-contained industrial satellites. Since 1959 all large urban centres in China have been encircled by an intensively cultivated horticultural zone, resembling the innermost circle of von Thünen's model.

A case study of the suburban development in Shanghai is presented. The findings reveal that China's city region strategy has successfully accomplished socialist urban transformation of the city.

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List of Abbreviations

ARL	Agrarian Reform Law
CCP	Chinese Communist Party
GAC	Government Administrative Council
KMT	Kuomintang
NVC	National Vegetable Corporation
PLA	People's Liberation Army
PRC	People's Republic of China
SARL	Suburban Agrarian Reform Law

A note on Romanization of Chinese Names.

Although the pin-yin has become widely adopted in Chinese publications since 1978, the Wades-Giles transliteration system will be used for most of the Chinese names and the postal system for provinces, major urban centres and rivers in the study.

GLOSSARY

Romanization	Chinese Characters	English
An-chuan hsi-shu	安全系数	Safety index (for vegetable production
An-chuan ti-tai	安全地帶	Safety zone
Ch'ang-ch'ü yung-ti	廠区用地	Land for factory compound
Cheng-feng yün-tung	整風運動	Rectification campaign
Ch'eng-hsiang hu tso	城鄉互助	Mutual aid between city and countryside
Ch'eng-hsiang tui-li	城鄉對立	Antagonism between city and countryside
Chêng-ti pu-chü	整体佈局	Comprehensive planning
Chi-chien tan-wei	基建單位	Capital construction unit
Chi-pên chien-she	基本建設	Capital or basic construction
Chieh-fang yung-ti	街坊用地	Land for neighbourhood
Chieh-yüeh yung-ti	節約用地	To use land frugally
Chien-chu hsi-shu	建築系数	Building ratio
Chien-chu mi-tu	建築密度	Building density
Chin chiao-ch'ü	近郊区	Near suburb
Chin-ch'i kuei-hua	近期規划	Short term planning
Chin-shên	進深	Perceptual dimensions of residential space
Ch'in-chien chien-kuo	勤俭建國	To build (our) nation through diligence and frugality
Ching-chieh ti-tai	警戒地帶	Alert zone
Chu-kuan chu-i	主观主義	Subjectivism
Chung ch'eng-shih	中城市	Medium-sized city
Chung-tien ch'eng-shih	重点城市	Key-point city

Romanization	Chinese Characters	English
Fang-hu ti-tai	防护地带	Security zone
Fang-hu yung-ti	防护用地	Land used for security purposes
Fang-kung ti-tai	防空地带	Air defence zone
Fên-san chu-i	分散主義	Dispersionism
Feng-shui	風水	Geomancy (wind and water)
Hsia-fang	下放	Sending down
Hsiao-fei ch'eng-shih	消費城市	Consumer city
Hsiao-fei shu-t'sai	消費蔬菜	Vegetable for self-consumption
I-ch'ung êrh-pai	一窮二白	Poor and blank
I-liao yung-i	一勞永逸	Once and for all
Jen-fang yung-ti	人防用地	Land used for protecting against intruders
Jen-min hsin-ch'eng-shih	人民新城市	People's new city
Kuan-ch'eh chin-hsing	貫徹执行	To adhere consistently to
Kuan-ch'eh fang-chin	貫徹方針	To keep to a policy
Kuan-liao chu-i	官僚主義	Bureaucraticism
Kuei-hua ch'ü	規划区	Planned district
Kuo-chia chien-she tan-wei	國家建設單位	State construction unit
Kuo-chia hsing-chih	國家性質	National nature
Kuo-chia shu-t'sai kung-szû	國家蔬菜公司	National Vegetable Corporation
Kuo-yu t'u-li shih-yung-chêng	國有土地使用証	Certificate for using state land
Kung-jen hsing-ts'un	工人新村	Workers' new village
Kung-kung chien-chu yung-ti	公共建築用地	Land used for public construction
Kung-nung lian-meng	工農联盟	Worker-peasant alliance
Lang-fei t'u-ti	浪費土地	To squander land
Lu-hua ti-tai	綠化地帶	Green belt

Romanization	Chinese Characters	English
Pao-mai pao-m'ai	包買包賣	Guarantee purchase and sale
Peh-wan jen-kou ch'eng-shih	百萬人口城市	"Million city"
Pei-kung yün-tung	批孔運動	Anti-Confucius campaign
Pên-wei chu-i	本位主義	Departmentalism
Pêng-hu ch'ü	棚戶区	Squatter district
P'ien-mien	片面	One-sided; unilateral
Pu-ch'ang-fei	補償費	Compensation
Shang-p'in shu-t'sai	商品蔬菜	Commodity vegetable
Shang-shan hsia-hsiang	上山下鄉	To go up to the mountains and to go down to the rural areas
Shao ch'eng-shih	小城市	Small city
Shê-hui chu-i piao-chun	社會主義標準	Socialistic standard
Shên-cha chih-tao	審查制度	Inspection system
Sheng-ch'an ch'eng-shih	生產城市	Producer city
Sheng-huo chü-chu yung-ti	生活居住用地	Land used for living and residential purposes.
Shih-chiao t'u-ti kai-keh tiao-li	市郊土地改革條例	The Suburban Agrarian Reform Law
Shih-pien	十 边	Ten margins
Shou-kou chan	收购站	Procurement station
Shu-shih wu-tu	熟視無睹	Look at, but pay no attention to
Shu-t'sai sheng-ch'an chuan-yeh ch'ü	蔬菜生產專業区	Vegetable production special district
Sung-t'u chu-chi chien-cha ti-tai	鬆土足迹檢查地帶	Loose soil zone for footprint inspection
Sze-ko hsien-tai-hua	四个現代化	Four modernizations
Ta-fen-san; shao-chi-chung	大分散 小集中	Large scale dispersion; small scale concentration
Ta-tzu-pao	大字報	Big character wall poster
Tao-tai	道台	Superintendent of customs

Romanization	Chinese Characters	English
T'ê ta-ch'eng-shih	特大城市	Metropolitan city
Ti-chin ch'i-li	地盡其利	To use land to the best of its advantages
Ti-fang hsing-chih	地方性質	Local nature
Tsû-yu shih-ch'ang	自由市場	Free market
Tung-i fen-p'ei	統一分派	Unified allocation
Tung-i ling-tao	統一領導	Unified leadership
Wei-chang chien-chu	違章建築	Illegal construction
Wei-hsing ch'eng-shih	衛星城市	Satellite town
Wei-hsing k'eh-li ti-tai	衛生隔離地帶	Hygienic segregation zone
Yin-ti chih-i	因地制宜	To do the best according to local condition
Yüan-ching kuei-hua	遠景規划	Long term planning
Yüan chiao-ch'ü	遠郊区	Far suburb
Yun-chia lu-ku	永久留居	To settle down permanently

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CHAPTER 1

INTRODUCTION

Objectives

An ambitious scheme of city building and transformation was initiated in China soon after the establishment of the communist government in October 1949. In the intense drive for industrialization, a very rapid expansion of cities and increase of urban population was inevitable. The latter phenomenon, in particular, has stimulated research into the demographic aspects of China's urbanization.[1] However, the spatial component which constitutes an integral part of the urbanization process has been given very scant consideration.

It is true, several well researched and written articles on cities of the People's Republic of China have appeared recently in geographical and non-geographical journals.[2] Unfortunately, these scholarly enquiries followed the traditional approach in urban studies which focussed exclusively on the central city, despite the institutionalization of the city region in China more than two decades ago. Furthermore, there are extensive scholarly contributions on western suburbanization, but there is virtually nothing written which explores the spatial developments in China's suburban areas. This study is intended to rectify these omissions.

In essence, the research attempts to investigate and analyse the dynamic changes of the suburban landscapes,

both agricultural and non-agricultural, in China from 1949 to 1959 within the context of central policies on economic development, suburban land legislation, official attitudes towards city building and China's emulation of the Soviet urban planning model. Also the enquiry examines critically the planning and developmental strategies adopted by the central authorities to resolve the problems in suburban land use, thereby seeking a special understanding of the urban region that was designed to contain spatial expansion of large cities and to achieve self-sufficiency in subsidiary food supply in major industrial centres, facilitating the promotion of rural-urban symbiosis.

This geographical essay is a preliminary study of the spatial aspects of China's urbanization. It is only hoped that it will serve to stimulate further research into this important yet neglected geographical topic.

Methodology

The methodology adopted in this enquiry was shaped mainly by the nature and availability of the source materials. Therefore, qualitative analysis was employed to explore the relevant determinants which contributed to the rapid changes of the suburban areas. The small amount of quantitative data selected for the study served to indicate broad patterns and general trends. Because of the general deficiency of this type of data, no attempt was made to introduce any statistical analysis into the study.

This geographical investigation covered the decade of 1949 to 1959, mainly for two reasons: first, this ten-year period was very significant in the history of urban and suburban developments of China. It witnesses the introduction of an integrated urban and regional planning experiment for controlling disorderly urban expansion, achieving self-sufficiency in subsidiary foods in large cities and restoring China's traditional urban-rural symbiotic relationship. Secondly, within this ten-year period data on China were more available than those of latter years. From 1959 to 1961 when very unfavourable conditions prevailed, little meaningful material appeared in the press or other official publications. From the beginning of the Cultural Revolution in 1966 to the early 1970s, publication of most academic journals was suspended. The only newspaper that reached the outside world was the People's Daily. Many of the academic journals that were available during the 1950s failed to reappear after the upheaval. Furthermore, because of the effective implementation of very stringent measures to stop smuggling of municipal newspapers and official documents from China, data from these sources were no longer available.

Two chapters of the study focussed on surveying the patterns of the non-agricultural land use change in suburban Shanghai. Again, the data of Shanghai were by far more abundant than those of any other Chinese cities, including the "key-point" industrial centres. Also, such an approach was intended to bring into sharper focus the implications of central policies for city building and the problems of land squandering and urban sprawl during the

First Five Year Plan period.

Organization

The first three chapters serve to set the stage for this suburban study of China. The initial chapter contains the introductory elements and a brief review of the terminology, definitions and concepts on western suburbanization. The second chapter examines the symbiotic relationships between the traditional Chinese city and its suburbs, and the foreign influences on China's suburban developments in the nineteenth and the twentieth century, with special reference to the treaty port of Shanghai. Chapter three analyses the Suburban Agrarian Reform Law that lays the foundation for China's spatial planning outside the cities. Both chapters four and five investigate the causative factors contributing to the serious land squandering and urban sprawl that occurred in all the new industrial cities. They discuss and elaborate, respectively, the shortcomings of the legislation for requisitioning and disposal of suburban land for state construction and the adoption of the Soviet model of city planning and development. The impact of the disorderly urban expansion on suburban agriculture is examined in chapter six, but its main theme focusses on the subsequent official efforts expended on achieving self-sufficiency in vegetable supply in large urban centres. The main thrust of the chapter centres on the discussion of the spatial reorganization of agricultural land use within the city region. Chapters seven and eight present a case

study of the non-agricultural development in the suburban areas of Shanghai, mainly within the context of central policy changes. The final chapter draws together some of the more important aspects of suburban China and gives some indication of further research possibilities.

Review of Literature and Data

This study has been a challenging undertaking, mainly because of the fragmented and sparse research data. It is well known to scholars of China that Chinese materials are characterized by numerous lacunae and that it is necessary to make cross checkings for internal consistencies.

Both the qualitative and quantitative data used in the research have been extracted mainly from primary source materials published in Chinese and in English in the People's Republic of China. Among materials in this category, the People's Daily, three of the four daily newspapers of Shanghai and those of other Chinese cities, the People's Handbooks, the compendia of laws and regulations, a selected number of official journals and academic periodicals, the Selected Works of Mao Tse-tung and the Peking Review constitute the most important sources. Academic journals published in the English language outside China provide supplementary data. Other first hand information has been gathered during a field trip in China in May and June of 1977 and from a selected collection of satellite imagery of Chinese cities. Secondary source materials include books published in the Chinese and the English languages.

The five volumes of Mao's Selected Works which contain a large number of articles written, and major speeches delivered by the late chairman of the CCP have been by far the most essential reading material for all China scholars and students alike. These publications reflect Mao's thinking and philosophy on socialism and communism, which form the backbone of all official policies implemented in China. Many of his statements have been frequently quoted in official speeches and documents. The People's Daily, the party organ, publishes all the central policies and directives. Most of these also appear with editorial comments in the Peking Review, a weekly publication in the English language since 1958. Two other important official publications include the People's Handbook that was published from 1949 to the early 1960s, and the New China Monthly which was changed to a semimonthly publication in January 1953 and renamed the New China Semimonthly. The former contained reports on the work of the central government and those of the ministries delivered at the People's Congress, policy statements, official notifications and directives, whereas the latter publishes important editorials from the People's Daily, and articles on a wide range of political, economic and cultural matters, foreign affairs as well as legal documents. Among the academic journals, the Journal of Architecture and Urban Construction contain a rich source of materials on planning and development of cities and satellite towns, urban renewal projects and design and layout of workers' housing schemes. During the 1950s China published several geographical periodicals:

Geographical Knowledge, Geography and Acta Geographica Sinica. The first title frequently publishes descriptive accounts and analytical articles on selected cities, emphasizing the contrasts between pre-liberation and post-1949 developments. The municipal daily newspapers, besides reporting significant local events, also echo and explain in the editorials policy statements and directives issued by the State Council and the Chinese Communist Party. Among the four major daily newspapers in Shanghai, the News Daily, the Cultural Contact Daily and the Liberation Daily provided the most indispensible source of data for writing the case study of the city in Chapters 7 and 8.

Comprehensive statistical data on post-1949 China are unavailable. Besides the population census data of 1953, a small number of complete sets of economic, demographic, agricultural, industrial and urban data for 1949 to 1959 was published in the Ten Great Years by the National Statistical Bureau. Other quantitative information was published, in fragmented form, in newspapers, official journals and speeches and reports of central ministries. It is significant to note that China often issued percentage increases without quoting base figures. Unfortunately, too, the quality of statistics that referred to the achievement of the Great Leap was so poor that they were more or less useless for research purposes.

Some information used in Chapters 6, 7 and 8 was provided by city planners in Shanghai, representatives of the revolutionary committees of the suburban communes at Wusih and Hangchow, officials from the China Travel Agency,

or obtained through personal observations during the 1977 visit to China. The tour included visits to fourteen cities[3] and the suburban areas of some of these city regions. The climax of the visit was the three-hour interview granted to the writer with two urban planners from the Shanghai Municipal Bureau of Urban Planning and Administration. The planners supplied many details not available outside China, particularly those concerned with the planning and development of the Shanghai City Region and on the ideological factors that influenced the existing patterns or would direct the future trends in integrated urban and suburban planning in China. The field trip that included visits to factories, health care units, suburban communes, educational institutions and the Shengli oil field[4] in Shantung province provided not only a general understanding of the socialist ideology and concepts applied to developing the city region system, but also first hand experience in observing and appreciating the transformed suburban landscapes - manifestation of the success of the Chinese experiment.

Some useful data were obtained from the interpretation of satellite imagery. Since the launching of ERTS-1 (Acronym for Earth Resources and Technology Satellite. It was renamed LANDSAT-1 in January 1977) on 23 July, 1972, space imagery of virtually every part of China, at various scales ranging from 1:1,000,000 (1 inch equals 16 miles) to 1:250,000 (1 inch equals 4 miles), has become available. It has proved to be a valuable geographical tool for studying "inaccessible areas" of the world. This type of remote sensing imagery provides a multitude of spatial and temporal

information, at a regional scale, of nearly every part of the globe. Familiarization with the image characteristics of the four bands of the satellite imagery facilitates extraction of a wide range of data on the City Region of Shanghai: urban morphology, transportation, suburban agricultural land use patterns and distribution and growth of satellite towns.

The phenomenal pace of suburban development in the industrial nations during the past decades has aroused the interests of social scientists to investigate the dynamic processes of suburbanization and the diversified patterns of this landscape phenomenon. Before the Second World War, contributions to the scholarly literature on the suburban area of western cities were dominated by American researchers. Since then, however, a fair share in this field of study has been documented by British and other western scholars.[5] In North America studies of suburban growth were pioneered by Whetten and others in the 1930s.[6] These researchers made significant contributions toward the understanding of the suburban movement. Their studies also provided a fundamental base for the formulation of public policies to deal with problems of suburbanization. Following these important investigations, agricultural economists, land economists, and sociologists actively engaged in analyzing and evaluating sociological and economic impact of the suburbanization processes upon the farm population, agricultural production, and land use changes in the ever expanding urban fringe areas. Contemporary suburban growth has attracted the attention of an increasing number of

urban geographers who subsequently redirect their research interests to studying the complex patterns of human activity at the periphery of urban centres.

No attempt will be made here to review all the western literature on suburban development. However, several distinguished contributions are worth special attention. These include Gerardus Wissink's American Cities in Perspective: With Special Reference to the Development of Their Fringe Areas[7], Marion Clawson's Suburban Land Conversion in the United States,[8] James Johnson's Suburban Growth: Geographical Processes at the Edge of the Western City,[9] and Lorne Russwurm's The Surroundings of Our Cities: Problems and Planning Implications of Urban Fringe Landscapes.[10]

In his classic work on urban fringe study, Wissink presented a detailed description and comprehensive comparative analysis of the common characteristics and developmental processes of the fringe areas of American cities and those of some European cities, taking into consideration the land use patterns, social and economic values, and institutions. One significant contribution which Wissink made was his recognition of the urban fringe area as part of the city itself, but not a separate geographical entity. It should be planned and developed as part of a great whole. The author demonstrated the strong relationship between the cultural system of a nation and the urban configuration in the context of the urban fringe of American Cities. His findings of the comparative urban fringe study of western cities indicated that the established political and social system played a dominant role in determining the success of the planning process.

Clawson's authoritative study included a rich collection of demographic, economic and land use data as well as many concepts relating to suburban planning. The central theme of the book focussed on the land use changes at the expanding edge of the American cities after the Second World War. Based on previously published materials, it explored the nature of the suburbanization process and examined the role played by various public and private agencies in the suburban growth process. Case studies of Washington, D.C., Wilmington, Delaware and Springfield, Masschusetts in the northeastern urban complex of the United States were presented to provide a better understanding of the suburbanization movements in contemporary America. Because of the persistence of the dispersed pattern of suburban development, Clawson proposed several alternatives to modify the present suburban land conversion practices, which, according to him, would contribute to change for the better.

Johnson's volume on suburban growth represented a collective effort of eleven contributors whose main interests were in the field of urban studies. Although all the essays examined primarily the spatial processes of suburban expansion outside cities of Western Europe and North America, their diversified themes ranged from general discussions on the activity patterns at the edge of cities, common problems of the urban fringe and approach to planning for urban Britain to more specific land use developments outside built-up areas of cities; spread of second homes, establishment of suburban manufacturing, retail trades and offices, decline

of suburban farming and provision for outdoor recreation. These individual studies also revealed the present directions of suburban growth of western cities and provided some insights into the urban forms of the future.

Finally, in his concise book, Russwurm identified the major problems developed at the urban fringe of Canadian cities. These were manifested through land use activity conflicts, land conversion difficulties, declining agricultural land base, environmental deterioration, servicing, social and planning difficulties. The author realized the national, provincial, regional and local significance of the suburban land resource, and strongly advocated more planning intervention to provide greater benefit to both individuals and the society. He suggested an integrated planning approach articulated through the involvement of various levels of government. Operationally, the national government would formulate broad policies, the provincial administration concentrate on specific guidelines which were in line with central strategies, and the municipal authorities implement these directing principles. The spatial unit for administration and planning, based upon labour market areas, would be under the jurisdiction of a regional government.

Terminology, Definition and Concepts relating to Western Suburbanization; A Brief Survey

The copious and diverse literature, particularly those dealing with the American suburbanization experience

during the three decades of 1930-1960, have offered a wide range of related terminology. Accompanying these terms are definitions and sometimes concepts advanced by scholars, based primarily on problems at hand, specific criteria relating to a particular case study, and definitive characteristics. These definitions and concepts may be descriptive, functional and hypothetical in nature.[11]

The terminology of significance and common usage introduced in suburban studies or fringe studies[12] on the American continent include: urban fringe, rural-urban fringe, suburbs, fringe and suburban zone. Others of lesser significance are rubia, rurban zone, satellite areas, suburban fringe, suburbia, rurban fringe, commuting zone and urban shadow.

Urban Fringe

In 1937 Lynn Smith, a rural sociologist, pursued a study on the composition and changes of the population of Louisiana, and introduced the term "urban fringe" in the literature for the first time.[13] Based primarily on locational characteristics, land use, and economic activity of the inhabitants, he defined the "urban fringe" as the built-up area just outside the administrative limits of the city, where non-agricultural land uses such as tourist camps, night clubs, filling stations and low-cost residential areas predominate. It was also an area with a high proportion of non-village, rural non-farm population.[14] Andrews differentiated "urban fringe" from "rural-urban fringe" in his

analysis of prevailing land use patterns of the "rural urban fringe" and the general processes under which the area experienced urbanization. The former was identified as the inner ring of the compact economic city, still in the primary stage of residential development.[15] Evidently the definitive characteristics of the "urban fringe" used by both social scientists appear to be similar. Nevertheless, it is significant to note that Andrews considered the "urban fringe" as part of the urban area - area lying within the city's legal limits.

In 1950 the United States Bureau of the Census established the urbanized areas, which included the "urban fringe". According to the proposed definition, the "urban fringe" embraced the closely settled areas surrounding the central city or cities. They must, however, meet a number of quantitative criteria such as population number, and dwelling density or population density. Non-contiguous areas with the minimum residential density of 500 persons per square mile, located within one and one-half miles of the main contiguous urbanized unit, and those areas devoted to industrial, commercial, transportational, recreational and other purposes functionally related to the central city, were regarded as part of the "urban fringe".[16] Nader adopted the term "urban fringe" to designate the area lying outside the developed urban area, (no reference was made to the administrative boundaries of the city), and extending to the outer limit of the commuting range of the city. The salient characteristic of this fringe area was the haphazard mixture of urban and rural (land) use. Based on the

zonal hypothesis of Burgess on theoretical urban growth and urban land use structure,[17] and the rate of land use conversion, Nader subdivided the "urban fringe" into two concentric zones. The inner zone, or "suburban fringe", a narrow belt where rural land use being actively changed into urban use. The outer zone, or "exurban fringe", was a close equivalent of Andrews' "rural urban fringe". Within this zone, transformation of agricultural land into urban uses, though less active, was evident. This belt was also characterized by the prevalence of idle land awaiting future development. One additional concept on the "urban fringe" advanced by Nader was the decreasing rate of land rent from the inner zone towards the outer zone.[18] The definition of "urban fringe" provided by Jaco and Belknap covered a very narrow geographical area. Further, the criterion which these sociologists used confined to only the occupation of the labour force. It included suburbs, satellite cities and any other territory located immediately outside central cities whose labour force was engaged in non-farm activities.[19] This definition bears some similarity to the generic term "satellite areas" introduced by Martin.[20] Finally, Jacob defined "urban fringe" in a simple but implicit manner:

> Similar to sand beaches, coastal marshes and prairie foothills, the "urban fringe" is a transition zone that links one concentrated activity (the urban core) with a set of dispersed activities.[21]

To some extent, the concept of the transitional nature of this landscape phenomenon is synonymous with the "twilight zone" presented by Black in the 1940s.[22]

Rural Urban Fringe

This is the most commonly accepted term among scholars in suburban studies, as reflected by its high frequency of use in the works of social scientists. Semantically, this term may have a more direct geographical connotation, implying the locational characteristic of the primarily rural area under the direct impact of the urban decentralization process, or that of the zone of interaction between the city and the countryside.

Salter, as a land economist, expressed his notion of the fringe area in terms of land use associations. He viewed the "rural urban fringe" as an area in which the land uses were related to both farming and urban interests. Using this criterion, Salter conceptualized the "rural urban fringe" as comprising three belts of territory surrounding an urban centre. The subdivision belt, occupying the innermost location, might actually lie well within the legal city boundaries, at the outer limits of fully developed city streets. The land use here was characterized by residential development and prematurely subdivided plots, and sometimes by a mixture of urban housing development, small acreages used by intense cultivation and highway commercial uses. The rather narrow territory lying outside the subdivision belt was identified as the rural residence belt where part-time farms and rural residences on small acreages predominated. The outermost belt, or the city's outer fringe, tapered imperceptibly into the surrounding countryside. Here, many urban oriented land uses, such as golf courses

and other recreational areas prevailed. Also, commercial uses interspersed with rural residences, and part-time farms and some commercial agriculture were evident.[23] Contemporary with Salter, Wehrwein, also a land economist, made a classic contribution toward analysing the processes of urban decentralization at work. He described the typical fringe areas of American cities as "institutional deserts", pointing out agricultural land outside urban areas had often been forced into urban uses prematurely, and restoration of derelict land to agricultural use was a rarity. In several of his publications, Wehrwein consistently used the term "rural urban fringe", and defined the area as a transitional zone between well recognized urban (land) uses and the area devoted to agriculture, comparable to the area between arable land and pasture, and the zone between farms and forests.[24] Rodehaver, in his sociological investigation of the peripheral areas of Madison, Wisconsin, presented a brief definition of the "rural urban fringe" which was not sociologically oriented, but typical of that of land economists. He defined it as "that area in which the land is utilized in an urban manner, while at the same time certain rural attributes are present as well".[25] Nevertheless, it is important to note that, according to the theme of the study, the rural urban fringe is conceived as a zone of convergence for migration of both urban residents and farm population. Andrews identified the area adjoining the "urban fringe" outward from the economic city as the "rural urban fringe". It was characterized by the intermixture of urban land use and rural land use. As a land economist,

the criterion which he used was essentially similar to that of Wehrwein. However, he elaborated that the development within the "rural urban fringe" was less intense than that within the "urban fringe". Conceptually, it was a zone where the invasion of non-rural land use into the agricultural land was most evident. In the same work, a conceptual map of the "rural urban fringe" settlement was also presented, showing the combination of the spatial forms of fringe development and typical residential area types.[26] For the purpose of delineating the specific study area in their Williamport project, Blizzard and Anderson identified the "rural urban fringe" as an area of mixed urban and rural land uses between the point where full urban services ceased to be available and the point where agricultural land uses predominated. However, from a sociological point of view, the authors believed that land use was but one aspect of fringe phenomena. For a more balanced concept of the fringe, the social interaction patterns and the social structure of the residents should also be considered.[27] Thus, the "rural urban fringe" was further conceptualized as an area where a distinct social organization related to both rural and urban life evolved within the local population. Such a view is shared by Fuguitt. In his review study of previous investigations pertaining to land use, social relations, institutional adjustments and farming in the "rural urban fringe", Fuguitt defined the fringe, in the United States experience, as an area in transition, shifting from rural to urban, especially in land use, occupational structure and social organization.[28] Among recent literature on

fringe study, a pioneer work in Britain is worth noting. Pahl adopted a sociological approach in his geographical study of Hertfordshire, a section of the London metropolitan fringe area. He conceptualized the rural urban fringe as an area of invasion; the mobile and fairly affluent middle class migrants moved from the central city into local communities of the once dominantly rural and semi-rural areas, bringing with them national values and class consciousness. Consequential upon such changes, a new type of community appeared.[29] The study provides useful insight into the processes involved in the social and spatial changes in the fringe area, which are remarkably different from those in the American experience. Mckain and Burnight differentiated the rural urban fringe into two divergent areas, designated as the limited fringe and the extended fringe. The limited fringe was contiguous with the city or urbanized area, and was characterized by the transition in land use. Because of the lack of stringent zoning regulations, this area often contained commercial, recreational and some manufacturing establishments, as well as housing developments which included expensive single family dwellings as well as jerry-built shacks. The extended fringe, on the other hand, was the area within the agricultural hinterland of the cities, where an increasing number of urban workers or persons who remained urban-oriented establish their homes. It was also regarded as an area where rural elements prevailed, and where there were more frequent contacts between people with urban ties and those with rural background. These distinct character-

istics of the extended fringe, as the authors argued, rendered it an ideal laboratory for rural sociologists to study social processes and social changes. As far as locational characteristics were concerned, both the limited fringe and the extended fringe were considered to be lying along the rural urban continuum. However, it was felt that whenever township boundaries were used by the Bureau of the Census to delimit metropolitan areas, they might also be used to separate these two divergent areas.[30] Such a view is debatable. The congruency between administrative boundaries and the transition of the two subdivisions postulated by Mckain and Burnight often varies considerably with the size of the metropolitan areas.

Pryor expressed concern at the confusion of terminology and concepts in fringe area studies, and thus suggested a definition of the "rural urban fringe" which integrated a number of essential characteristics. First, it was a transitional zone in land use, social and demographic characteristics; secondly, it was characterized by incomplete provision of urban utility services; thirdly, coordination in zoning or planning regulation was absent; fourthly, it was a continuation in territorial expansion from the political boundaries of the central city; and fifthly, there was an actual and potential increase in population density. Current population density was aboye that of surrounding rural area but lower than that of the central city.

In the same study Pryor presented a "process-response model",representing an integration of the concept

of urban decentralization process with the resulting response of mixed rural and urban land use pattern typical of the rural urban fringe. Land use transition from rural to urban and the degree of urbanization within the fringe area were emphasized, with the assumption that the intensity of urban invasion, expressed in percentage of urban and rural land use, within the agricultural hinterland corresponded with the distance from the central city. Although land use constituted the major criterion used in the model, other fringe area characteristics provided the basis for differentiating the rural urban fringe into two subzones: the urban fringe and the rural fringe. According to Pryor, the characteristics of the urban fringe encompassed its contiguity with the central city, relatively higher density of occupied dwellings than the median value in the entire rural urban fringe, a high proportion of urban functions, and a higher rate in population density increase, land use conversion and commuting. Peripheral to the urban fringe was the rural fringe. In contrast, this subzone contained a high proportion of land in farm, but a low density of occupied dwellings, and a lower rate of population density increase, land use change, and travel from one's daily work in cities.[31] Without doubt, the definition proposed by Pryor is the most complete and acceptable to social scientists. It embraces all the major characteristics of fringe areas. The validity of his quantitative approach in dividing the rural urban fringe into the two subzones is questionable, however, as in reality, the percentage of either urban or rural land use may not necessarily vary in indirect pro-

portion to the distance from the open countryside and the urban mass respectively, as the model suggests.

Suburb and Fringe

The term "suburb" is derived from the Latin "suburbium".[32] It came to the English language via the old French "suburbe", meaning literally "near to the city".[33] Frequently in scholarly literature, it refers particularly to the relatively small but formally structured community of the residential or dormitory variety, characterized by dependence on the city occupationally and for various specialized types of shopping, services and recreation. The geographical location of these communities is outside the legal limits of cities but within commuting distance.[34]

In 1950 the Population Census of Sweden introduced new demarcation boundaries of its suburbs and other main agglomerations. These boundaries were drawn according to the actual built-up areas and not following legal limits previously used. Accordingly, a suburb was a settlement in which more than a third of the economically active population were out-bound commuters, or had their place of work in another town or city. Administratively, each suburb was an independent unit.[35] According to these criteria, the towns of Nacka, Sundbyberg, Solna, Djursholm, and Lidingo were the suburbs of Stockholm in the 1950s.

"Suburb" is a term which no standardized meaning has been developed on the American continent. In the literature it has been used loosely by social scientists

as by the layman. Specifically, in the United States, it has been applied to areas outside the city limits or the "ring" of the Standard Metropolitan Statistical Area (SMSA), which display a distinct fringe characteristic. For example, Downs applied "suburb" to all parts of the SMSA outside of central cities, thus including unincorporated area as well as suburban municipalities.[36] In the latter part of the same work, however, he specifically defined suburb as communities having a population that ranged from a few hundred to over eighty thousand. Their land use varied from purely residential to almost entirely industrial with nearly all possible mixtures in between, and in distance from just outside the central city to over a hundred miles away.[37] According to Woodbury, suburbs were simply forms of land use and development, with the concomitant political, economic and social forms and attitudes, that could be found relatively near to but outside of large central cities.[38] As he used the census statistics of the SMSA in the study, he inferred that a suburb includes the entire area within the SMSA, excluding the central cities.

The similarity in the physical and economic characteristics between the incorporated places and the parcels of unincorporated places located outside the central city within the SMSA contributes to the frequent mixed use of "suburb" and "fringe". Such a confusion of concepts and their clarification have been a concern of social scientists for many years. Fava (1956), Kurtz and Eicher (1958), and Wissink (1962) differentiated "suburb" and "fringe".[39] Harris and Ullman (1945), Martin (1956), and Schnore (1957)

made some important distinctions between "suburb" and "satellite".[40] In particular, Kurtz and Eicher felt the crucial need for clarifying the confused concepts of both "fringe" and "suburb" because they were used interchangeably in the literature. The major cause for the confusing situation, according to the authors, was the sharp division between the theoretical approach and the empirical approach among researchers in sociology. The theorist tended to focus on general social characteristics. In contrast, the empiricist usually emphasized physical, geographical, demographic, or political attributes. Based on five selected definitive characteristics, such as geographical location, land characteristics, growth and density of population, occupation of residents and government structure, Kurtz and Eicher provided a satisfactory distinction between the "fringe" and the "suburb", which was summarized as follows:

> (the fringe) location beyond the limits of the legal city, in the 'agricultural hinterland', exhibiting characteristics of mixed land use, with no consistent pattern of farm and non-farm dwellings. The residents are involved in rural and urban occupations. The area is unincorporated, relatively lax zoning regulations exist, and few, if any municipal services are provided. The area shows potentialities for population growth and increasing density ratios. Present density ratio are intermediate between urban and rural.
>
> In contrast, ... the suburb follows location beyond the limits of the legal city, ... with a consistent non-farm residential pattern of land use. The residents are primarily employed in urban occupations, mostly in the central city. The area may either be incorporated or unincorporated, depending upon the type of suburb under investigation. However, some municipal services are provided even in the unincorporated suburbs; this is a responsibility assumed by real estate interests. Population growth may be taking place on the periphery, and density ratios are intermediate between urban and rural.[41]

Suburban Zone

In 1948 Throop completed geographical research on the periphery of metropolitan Portland, Oregon, and introduced the term "suburban zone". To define the study area, he employed two basic criteria: land use and administrative characteristics. The influence of transportation was also taken into consideration. Thus, within the "suburban zone", or "fringe" which Throop frequently used interchangeably throughout the study, there was a greater intensity of land use in non-agricultural function. Administratively, the government of this unincorporated, semi-urban, semi-rural portion of the urban periphery was not vested with the general power commonly delegated to incorporated government. According to these definitive characteristics, the "suburban zone" of Portland was described as an interrupted, irregular ring with unevenly spread spoke-like projections extending along the transportation arteries leading from the city.[42] Among works of the early investigators, Throop points out for the first time the modifying effect of modern transportation upon the generally accepted concentric zone-like morphology of the landscape phenomenon. This concept is quite similar to that of von Thünen.

A variety of very closely related terms referring to the contact zone between urban and rural land use has been suggested by western scholars, particularly land economists and rural sociologists. Unfortunately, many of these terms have been often loosely used in the litera-

ture. Specifically, different concepts have been represented by the same term, and, too often, unlike terms used for presenting the same concept.

It is significant to note that despite the lack of general agreement among social scientists in defining this landscape phenomenon, most of the definitions offered have integrated, or at least implied, the concept of "urban invasion", or the impact of the centrifugal forces generated from urban centres upon the rural land located at the urban periphery. This is evidenced by the general acceptance of the intermixed urban and rural land use, and, in particular, the strong competitive position of urban functions, as a distinct characteristic of the zone.

The general inconsistency in the identification of criteria or characteristics by various authors, and the use of these elements for providing a framework in the formulation of definitions and concepts are commonplace in suburban studies. Myers and Beegle remarked that many definitions of the rural-urban contact zone emphasized a particular aspect to the exclusion of the others.[43] Indeed, such a criticism is well justified. For, most urban fringe studies have been limited to case studies of a single urban centre or a small sample of cities. The socio-economic and demographic aspects, which have often been employed as definitive criteria, exhibit a highly heterogeneous mixture of both urban and rural characteristics. Further, it is typical of western industrial cities, especially those in the United States, that the rate, scale, character and direction of the suburbanization

processes vary considerably in space and time.

Finally, confusion of concepts of suburbanization has become persistent and substantial scholarly problems in the field of suburban research. Undoubtedly, the root of these problems arises from the spatially amorphous form, and the highly dynamic and chaotic advance of the urban frontier, brought about by ineffective administrative control and absence of planning measures which are typical of many cities in the industrialized world.

CHAPTER 1 - NOTES

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2. Chang, S.D., "The Changing Systems of Chinese Cities", Annal of the Association of American Geographers, vol. 66, no.3, September 1976, pp.398-415.

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   Salter, C., "Chinese Experiment in Urban Space: The Quest for a Agrapolitan China", Habitat, vol.1, no.1, 1976, pp.19-35.

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3. The cities were Canton, Peking, Tsingtao, Tsinan, Nanking, Yangchow, Wusih, Soochow, Shanghai, Hangchow, Changsha, Hsiangtan, Shaoshan and Kweilin.

4. The settlement at Shengli oil field, a copy of the Taching model, spatially integrated industry, agriculture, and residential functions. While mainly engaged in crude oil production, the workers also took part in agriculture. The rice fields were reclaimed from sterile

alkaline flats by the workers' wives. The seeds for the rice crop were developed locally to suit the soil types and climatic condition in the area. Through these special efforts self-sufficiency in food grains and vegetables was achieved.

5. Pryor, R.J., "Defining the Rural-Urban Fringe", Social Forces, vol.47, no.2, 1968, pp.202-215.

Wissink, G.A., American Cities in Perspective: With Special References to the Development of Their Fringe Area, Sociaal Geografische Studies, Hoogleraar aan de Rijksuniversiteit te Utrecht, nr.5, (Assen, Netherlands: Royal van Gorcum, 1962).

Pryor and Wissink provide excellent bibliographies on suburban studies published in the decades of the 1940s and 1950s, and early 1960s.

Extensive references of the 1960s and 1970s are contained in:

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Thompson, W.S., The Growth of Metropolitan Districts in the United States, 1900-40, (Washington,D.C., Government Printing Office, 1947);

Bogue, D.J., Population Growth in Standard Metropolitan Areas, 1900-1950, (Washington,D.C., Government Printing Office, 1953).

Hawley, A.H., The Changing Shape of Metropolitan American, (Glencoe: Free Press, 1956).

7. Wissink, G.A., (1962), op.cit.

8. Clawson, M., Suburban Land Conversion in the United States: An Economic and Government Process, (Baltimore: The John Hopkins Press, 1971).

9. Johnson, J.H., (1974), op.cit.

10. Russwurm, L.H., The Surroundings of Our Cities: Problems and Planning Implications of Urban Fringe Landscapes, (Ottawa: The Community Planning Press, 1977).

11. In the present study of suburban China, the term suburbs in the pre-1949 sections simply means the areas outside the city walls or urban centres, whereas suburban areas or suburban districts in the post-1949 sections refer to the territory designated by the municipal authorities for suburban land reform or planning purposes. As part of the findings of the investigation, a definition for the suburban areas in the People's Republic of China will be presented in the concluding chapter.

12. Anderson, W.F., A Method for Delineating the Rural-Urban Fringe Surrounding Small Cities, M.A. thesis, The Pennsylvania State College, Department of Agricultural Economics and Rural Sociology, August 1951, p.9.

Anderson presents a distinction between the conceptualization of suburban studies and fringe studies. "The former have usually dealt with one or more political units which are somewhere in the sphere of dominance of metropolis and which may vary in their parts from completely urbanized and, in some cases, incorporated, territory to that which is purely agricultural. The political units selected may or may not have been assumed to be typical of larger areas in which the same process of suburbanization is taking place. Fringe studies, on the other hand, generally conceive of the area to be studied as more or less homogeneous in containing mixed rural and urban land uses and as extending in a belt all the way around a city. Even though so-called typical neighbourhoods in the fringe may be picked out for intense study, the area of which they are supposed to be typical is by no means identical with the area which the student of suburbanization seems to have in mind."

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Louisiana State University and Agricultural and Mechanical College, Agricultural Experiment Station, p.26.

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Movement", Rural Sociology, vol.12, no.1, March 1947, pp.49-57.

26. Andrews, op.cit., p.169.

27. Blizzard, S.W. and Anderson, W.F.,II, Problems in Rural Urban Fringe Research: Conceptualization and Delineation, The Pennsylvania State College, Agricultural Experiment Station, Pennsylvania, Progress Report no.89, 1950, p.11.

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CHAPTER 2

SELECTED ASPECTS OF THE TRADITIONAL CHINESE SUBURBS

Introduction

Throughout the long and continuous urban history of the Middle Kingdom, extramural developments in various forms had been an integral part of the walled settlements. Suburban workshops were established outside the city walls of Ao, the capital city of the Shang (about 1500 B.C.) and China's earliest urban settlement. Many cities of the feudal Chou Dynasty (1027-221 B.C.) were exclusively fortresses or strongholds of kings, and nobles and their vassals. Each of these nobles directly administered the territory around the citadel, and was responsible for what was essentially individual city states. Outside the walled enclosures lived the nobles' craftsmen, including blacksmiths, carpenters, swordsmiths, and other artisans.[1] Towards the final years of the Ch'un-ch'iu period (722-481 B.C.), the change in the function of cities from that of mere fortified settlements to that of industrial-commercial centres brought a significant change in city layout. The large industrial, commercial and residential quarters located outside the original core of administrative and aristocratic residences were assimilated into the city by new outer walls.[2] In later dynasties, beginning from the late T'ang (c.830-905 A.D.) and during the Southern Sung (1127-1278 A.D.), rapid urbanization led to extensive growth of extramural settlements.[3] Outside the four gates of Ch'angan, capital of the

T'ang, outgrowth of the city formed the Tung Kuan, (the largest Nan Kuan, Hsi Kuan, and Peh Kuan.[4](meaning East Gate, South Gate, West Gate and North Gate respectively). From 1165 to 1173, about one-eighth of the 41,617 taxable households in Yin Hsien was recorded as residing within the walled city of Ningpo, and an unspecified number of the remainder lived in suburbs. Business districts of substantial size had sprung up just outside the city gates, and new suburban wards (hsiang) had to be created to incorporate these newly settled areas.[5] By the nineteenth century very few cities lacked suburban settlements outside at least one of the city gates.[6] In the seventeenth century the city of Canton in Kwangtung province, selected by the imperial court as a centre of contact between China and foreign traders, had extensive built-up areas in the suburbs, which exceeded those within the city walls. It was during this period that profound changes occurred outside some Chinese cities. By virtue of the Treaty of Nanking in 1842, the British opened up the five coastal cities of Shanghai, Ningpo, Foochow, Amoy and Canton to foreign trade. Concessions were set up outside these Chinese walled cities forming foreign settlements and commercial districts. These suburban developments, particularly those outside Shanghai, spread rapidly into the surrounding countryside during the subsequent decades. These built-up areas displayed some distinctly alien characteristics, reflecting the impact of foreign influence upon the traditional suburban landscape.

Spatial Structure of Ancient Chinese City States

As substantiated by documentary evidence, the traditional Chinese suburbs generally exhibited a more compact form which contrasted with the dispersed morphology of contemporary western suburban developments. According to one commentary of Erh-ya,[7] the oldest encyclopaedia in China, the archaic Chinese city was surrounded by four concentric rings. Outward from the city which occupied the central place were the suburbs, the rural area, the forests and the frontier. Another commentary of the same classical publication mentioned that there were five zones outside the central city; the suburban zone, the grazing zone, the rural zone, the forest zone and the frontier zone.[8] Chou-li, one of the three books on rituals of ancient China,[9] described the suburb as lying immediately outside the walled cities of the Chou. For administrative purposes the Chou kings divided their city states into two main parts, known as "kuo"(state) and "yeh" (wilderness). While the original meaning of "kuo" was state capital, or capital city, the area within the walls of the capital was known as "kuo-chung" (citadel), or centre of the capital. Extending outwards from the walls were the "sze-chiao" (four suburbs), as occupying a territory of considerable size; on the other hand, "yeh", the zone lying outside the suburbs, was referred to as the countryside. Thus, the suburbs and the encircling rural areas formed distinctive zones around the central city, typical of the Chou dynasty. According to the Chou system, the width of

the suburban belt varied with the hierarchical order of the administrative enclaves. The suburb of the capital of the Chou kings was 100 li wide, and that of the capital of a vassal's domain only 10 li.[10] Morohashi noted that the suburb of the royal capital of the Chou was further subdivided into two concentric zones, each having a width of 50 li. The zone lying closer to the city was the "near suburb", and the other, farther out, the "far suburb".[11] Other documentary evidence revealed that, under Chou feudal rule, the "kuo" actually embraced both the citadel and the suburbs. The latter were designated as "liu hsiang" (six townships) which were inhabited by the urban aristocrats or vassals of the overlord. These suburban residents were known as "kuo jen" (citizens of the city state), who held special privileges bestowed by the overlord. They were allowed to participate in decision-making when the city state was in crisis, when there was a need to select a new site for the capital, and when succession problems arose. Under the "hsiang tzu" system, one of the important social structures of the Chou, the zone of "yeh" was designated as "liu tzu" (territory lying within 100 li from the capital). The residents of "liu tzu" were peasants and entitled to own land for tillage under the land distribution system of the Chou. They also held the responsibility of supplying the nobles and the vassals of the overlord living in the "kuo" with grains, as partial payment for the land taxes to the city state.[12] Although the area of "yeh" consisted predominantly of farmland within each of the relatively homogeneous "compartments" or "cells" of Chou's self-sustaining

city states, the existence of the land allotment system in the suburbs, "liu hsiang" suggested that agriculture was also practised in the suburban zone lying outside the city walls. Lattimore noted that the more fertile parts were generally less than a day's walk from one city to the next,[13] which helps to support the view that the suburbs were generally the most intensively cultivated and highly productive, while in the rural areas beyond the agricultural system was extensive in character.

In these respects the general spatial structure of the city states emerged in the Chou dynasty was similar with those described in Von Thünen's hypothetical land use model.[14] In broad terms, the intensively cultivated suburban zone outside the walled cities bears a striking similarity to the first ring of Frei Wirtschaft. The rural zone lying outside the suburban zone corresponds to Von Thünen's three rings of extensive agriculture in location relative to the central city. There is a discrepancy in the relative location of the forest zone. It constitutes the second ring in Von Thünen's concentric zoning pattern, whereas it was located between the rural zone and the frontier zone, forming instead the third ring in the spatial land use pattern of the city states of the Chou times. This may suggest in reality, forests in Chou China had been cleared extensively prior to the establishment of each nucleated settlement and the creation of new land for cultivation, and would have been pushed back rapidly as the population of the feudal domains increased.

Symbiotic Relationships between Cities and Their Surroundings.

It is particularly significant to note, in the present context, that the suburban zone located immediately outside the city rampart, interpreted as an area of intensively cultivated land has been considered an integral part of China's traditional urban development. The close locational, and, probably, functional relationships between city and its suburb in China is reflected by the etymology of the character "chiao" (郊)(suburb). The word belongs to the category of determinative-phonetic characters in written Chinese, which is made up of two components.[15] The right hand side element of "chiao" is the radical for city (阝) which is a semantic symbol and an alternate character for "i" (邑). The latter, in its original form carved on oracle bones and ceremonial bronzes, appears as a human figure kneeling beside a circular-shaped walled city (𠙵).[16] It is the earliest character for citadel or walled city. The left side element, (交), "chiao" on the other hand, is a phonetic symbol, which provides the speech sound for the character. Wheatley noted that Kuo-yü, accepted as part of Chinese classical literature, expressed the spatial and functional dichotomy of ancient Chinese walled cities and indicated that, realistically, the fields that lay beyond the city walls were regarded as an integral element of the urban system.[17]

Such a close association between the traditional Chinese cities and their suburbs is probably attributable to two major factors. First, the flood plain of the Yellow

River, over which the Chinese civilization gradually spread after its emergence from the Wei River Valley to the west, provided fertile alluvial soils for agricultural activities. When choosing sites for cities, the Chinese generally sought advice from geomancers, and, at the same time, hoped to exploit the natural advantages of proximity to the river, for water supply and transportation; the higher ground of natural levees along river banks also provided some protection from invaders or flood.[18] Thus, the major urban centres erected between 1100 to 220 B.C. were located along or close to the rivers in north China.[19] Secondly, during Chou times, frontier wars were frequent between the nobles and rebels who allied with invading nomads from the northwest. The walled cities offered safe storage for grains and other agricultural surpluses, as well as refuge for the peasants and other inhabitants of the surrounding countryside. Concern for the security of the suburbs led to the building of new walls outside existing ones. Thus cities with double walls were believed to have originated during the Eastern Chou, when outer walls were erected for the protection of extramural settlements and workshops of artisans.[20] During the 1950s the archaeological excavation of Wo-kuo in southern Shansi, a city of the Eastern Chou, revealed a double enclosure. The inner walled settlement was a square of about 1,100 metres to a side, within which were abundant cultural relics. With regard to the outer enclosure, only the northern and the western walls remained; the former measured over 3,100 metres and the latter about 2,600 metres.[21]

The new symbiotic relationships between city and its suburbs, as pointed out earlier, continued throughout the Ch'un-ch'iu (Spring and Autumn) period. In order to make possible the use of the productive farmland in the suburban zone to produce food for the urban dwellers, especially during the times of siege, a second line of defence was often constructed for the protection of these agricultural plots and the suburban residents.[22] The suburbs of Dieng in the State of Lo are believed to have existed as early as 705 B.C. and the protecting walls were built in 557 B.C., when the forces of the Marquis of Dz'ior were threatening the city.[23] Another example cited by Wheatley was Ch'u-ch'un where inner walls surrounding the ceremonial centre were erected in the spring of 657 B.C. and the walls surrounding the suburbs were added when an attack by Diek appeared to be imminent in the spring of 647 B.C.[24] Ssu-chien in present-day Kiangsu was another example of a double-walled Ch'un-ch'iu city; it consisted of a small inner walled city and an extensive intramural area.[25] By the Chan-kuo (Warring States) period, on account of the continuous conflicts among the feudal states, the double walls became a characteristic feature of cities. These walls were built according to specifications which frequently appeared in Chan-kuo writings, and such accounts were confirmed by recent archaeological finds. A typical Chan-kuo city was supposed to have an outer wall of seven li in circumference and an inner walled settlement three li in circumference.[26] Also, cities built in Chan-kuo times had spacious intramural area. The city of Yüning,

also known as Yünan, in Honan province included a brick inner wall enclosing the aristocratic residences and the structures for administrative and ceremonial purposes, and an outer rampart of pounded earth, terre pisé, enclosing an intramural area at least seven times the areal extent of the inner city. The inner urban complex was completely built up, whereas the suburban area consisted of open fields and scattered settlements.[27] This physical layout bears a striking similarity to that of Nimrud, second capital of Assyria, built in the early part of the ninth century B.C. This Assyrian capital consisted of a rectangular compound of about 360 hectares, surrounded by a mud-brick wall. Within a fortified inner city were palaces, temples, public buildings and residences of the rich, while the outer compound provided space for the ordinary people, open fields, parks and zoos.[28]

In a comparatively recent example, the original rampart of the city of Quinsai (Hangchow) was constructed at the beginning of the seventh century A.D. In 893 A.D. outer walls were built, which stretched well beyond the city to the north and the south, so as to protect the numerous vegetable gardens in the eastern suburbs from attacks by pirates who came up from the Che River.[29]

In later times suburbs developed as the result of rapid population growth inside the walled cities. K'aifeng, originally built during Chan-kuo times, had a population of over half a million during the T'ang dynasty (618-906 A.D.). The city was chosen as the imperial capital by Kao-tzu, the first emperor of the Northern Sung dynasty

(906-1126 A.D.). For over a hundred years, K'aifeng served as a political and administrative centre, and it also emerged as an important and thriving industrial and commercial focus. The number of inhabitants in the city is believed to have grown to over one million. This large increase of urban population generated new developments outside the city gates. As the extramural zones became as heavily built-up as the inner city, they were enclosed by new walls.[30] These outer walls for protecting the suburbs often departed radically from the traditional rectangular or square shape which had been determined by the antique symbolism, and this became a typical characteristic of walled cities under the Sung.[31]

The tradition of erecting second walls for protecting the extramural settlements and farm land continued well into the late Imperial Era. Lanchow's suburbs were fenced in by extensive outer walls in the fifteenth century. In certain cases, a partial wall was erected to envelop the major suburban development. The southern suburbs of Cambaluc (Peking) and Canton had been enclosed in the sixteenth century, and those of Tsinan in the nineteenth century.[32] The 1909 street map of Fengt'ien, (present-day Shenyang in Liaoning province), the dynastic capital of the Manchu, shows the double enclosures of the city. The outline morphology of the inner city, inside which the imperial palace stood, was almost a perfect square, aligned with the cardinal directions. Its interior layout, with its grid-patterned streets, also displayed nearly all the characteristics of a traditional Chinese capital. The

outer walls, on the other hand, were slightly oval in shape. They enclosed an area at least nine times that of the royal city. In terms of land use within this intramural space, which is of significance, about 30 per cent was occupied by open space and vegetable gardens, and the rest built-up areas.[33]

The double walled urban settlements represented a significant change in city layout, especially since Chan-kuo times, which remained in evidence among many cities in north China until well into the twentieth century. Nevertheless, many cities also have single walls enclosing both urban settlements, and very large open space. As shown in many city plans in Shina Jokaku no Gaiyo, the enclosure of cultivated land within the urban landscape in many Chinese walled cities seems to have been commonplace. Siren Osvald, after touring many northern Chinese cities in the early part of the twentieth century, wrote the following accounts:

> Passing through one of the less frequented gates in some of these cities one is often surprised not to find oneself in a busy street, lined with shops and houses, but in open fields or empty tracts with nothing but refuse heaps and stagnant muddy ponds. Thus, for instance, the western and southern portion of Tsingchow-fu is largely utilized for grain fields and vegetable gardens, in spite of the fact that people who have lately moved into the city can hardly find a room or a shed to sleep in; and in Sian-fu there are large stretch of empty ground inside the walls on the western, northern and eastern sides, and ponds of considerable size where ducks and tortoises thrive in the quiet mudlike water.[34]

It is very possible that after the dissolution of the feudal Chou states, cities may also have grown out of small towns and hsien capitals.[35] The original walls of these smaller population centres had already enclosed a

substantial amount of land within the settlement, which may have served the purpose of providing an essential supply of food in the event of rural disorder, or reserving ample space for the city's expansion. Hsu provided an alternate explanation for the presence of rural characteristics within the walled cities of China. He maintained that the outer walls of cities were usually strengthened at later times at the expense of the inner walls enclosing the citadel, which were allowed to decay. Thus, according to Hsu, the open fields and orchards found within the urban areas were originally part of the old suburb.[36]

Foreign Influences on China's Suburban Development

Foreign trade played an important role in stimulating suburban growth in Imperial China. In several cases, the size of extramural population as well the areal extent of suburban territory exceeded those of the walled cities. During the T'ang dynasty the population of Canton (Kwangchou), a major port city at that time, already had a population of 200,000. Many of these inhabitants were traders from the Near East and Southeast Asia, and included Persians, Arabs, Brahmans and Malays. These foreign businessmen and settlers, treated as aliens by the Chinese authorities, were required to reside in a segregated settlement[37] located in the southern suburbs across the Pearl River, to the south of the city. The total population of this suburban settlement at one time surpassed that residing within the walled city of Canton.[38]

Under the orders of the Ming emperors, merchants from all parts of the Chinese Empire and from foreign countries established their homes and commercial establishments outside the southern wall of Cambaluc, the dynastic capital. By about 1552 A.D. this relatively more important and sprawling suburban growth was fenced in by a new wall forming the Outer or Southern City.[39] The creation of the new suburb increased the total area of the Ming capital from 11.7 square miles to more than 22 square miles.[40] Marco Polo, during his visit to this Ming capital, was immensely impressed by the vast size and the well established suburban settlements, containing residences for foreign traders of different nationalities. Although there are no official statistics for the population of the city, the southern suburb must have been quite densely inhabited. According to Marco Polo's estimate, the number of prostitutes residing in the suburb (these were not allowed to live inside the walled city) was well over twenty thousand. He further described suburban Cambaluc as follows:

> ... there are as many suburbs or districts, outside the city at each gate, as gates there are twelve, which are very large so that the suburb of each gate touches the suburbs of the gates on either side, and they extend for a length of three and four miles; and there is no man who could tell the number. For there are many more people in those suburbs than in the town. And in each of these suburbs or districts for perhaps a mile distant from the city are many and fine factories in which stay and lodge the merchants and the travelling foreigners, ... Moreover I tell you that there are as beautiful houses and as beautiful palaces in the suburbs as in the town, except those of the greatest lord.[41]

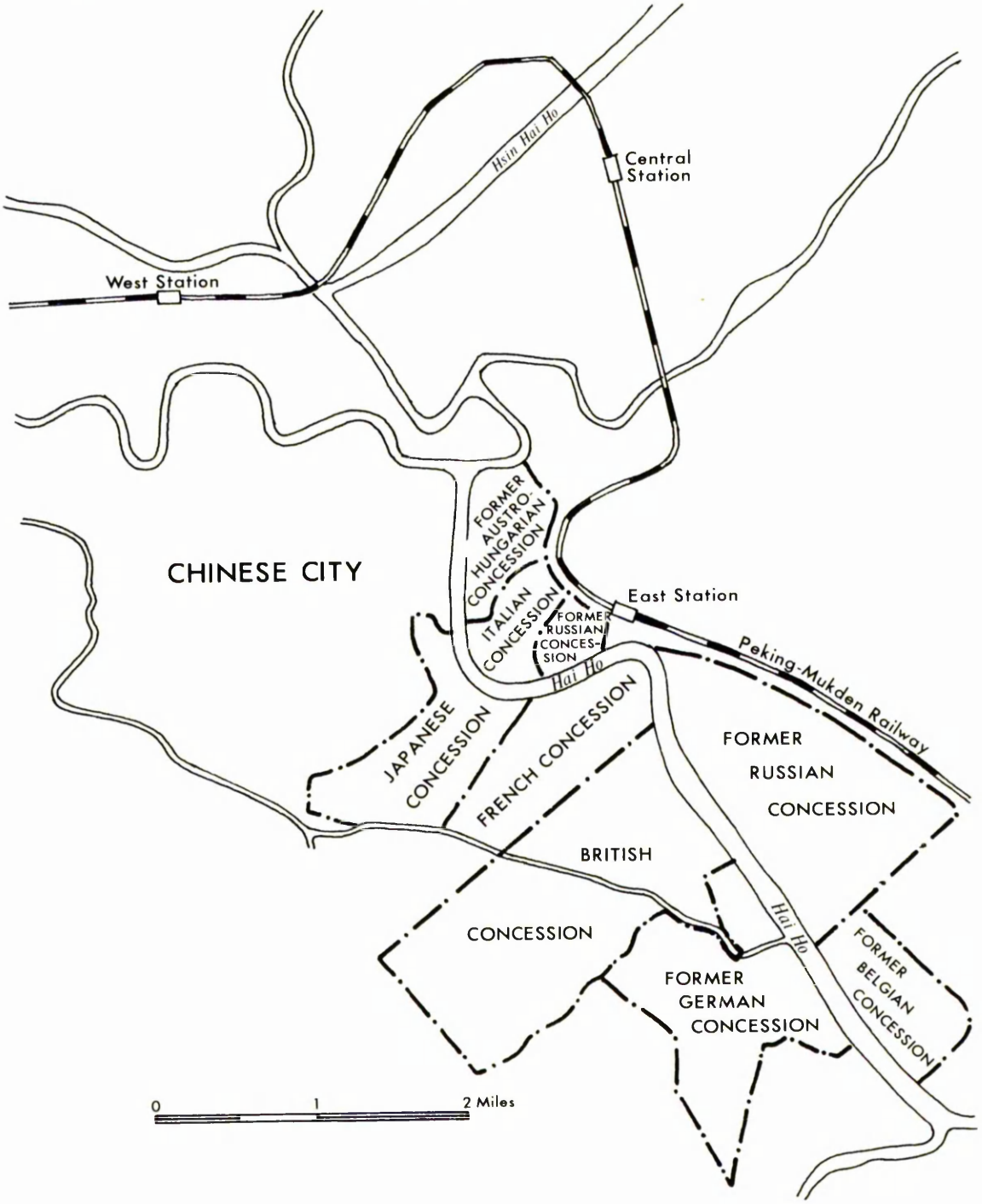
Increasing foreign contacts through trade during

the first part of the nineteenth century greatly accelerated suburban growth in China. In particular, a new pattern of extramural development evolved around some of the coastal cities and river port cities. After the official opening of China to foreign trade at the end of the Opium War in 1842, many foreign merchants and their families arrived and congregated in the five treaty ports of Shanghai, Ningpo, Foochow, Amoy and Canton along the east and the southeast China coast, and at a later date in Hankow, Ichang, Nanking, and Chungking on the Yangtze, as well as the north China city of Tientsin.[42] (Map 2A)

At the beginning of the treaty port era, foreigners were still not permitted to settle inside the Chinese walled cities. The foreign powers, on the other hand, found the Chinese cities crowded, noisy, smelly and filthy.[43] They requested land in the open countryside outside the Chinese walled settlements to set up their concessions. Thence, nucleated settlements and commercial developments with non-Chinese characteristics appeared outside the battered ramparts. In a few cases, these foreign settlements were erected at some distance from the treaty port city and grew into thriving communities. In Ningpo several suburbs had sprawled outside the city gates in the early part of the nineteenth century. Among these, the busiest was Chianghsia, lying between the east gate and the river. On the opposite bank was another busy suburb of Yungtung, where merchants specialized in marine products, timber, cereals and other business. The district was also noted for its warehouses, rice mills and shipyards.[44] Foreign traders brought about

MAP 2A

FOREIGN CONCESSIONS OUTSIDE TIENTSIN



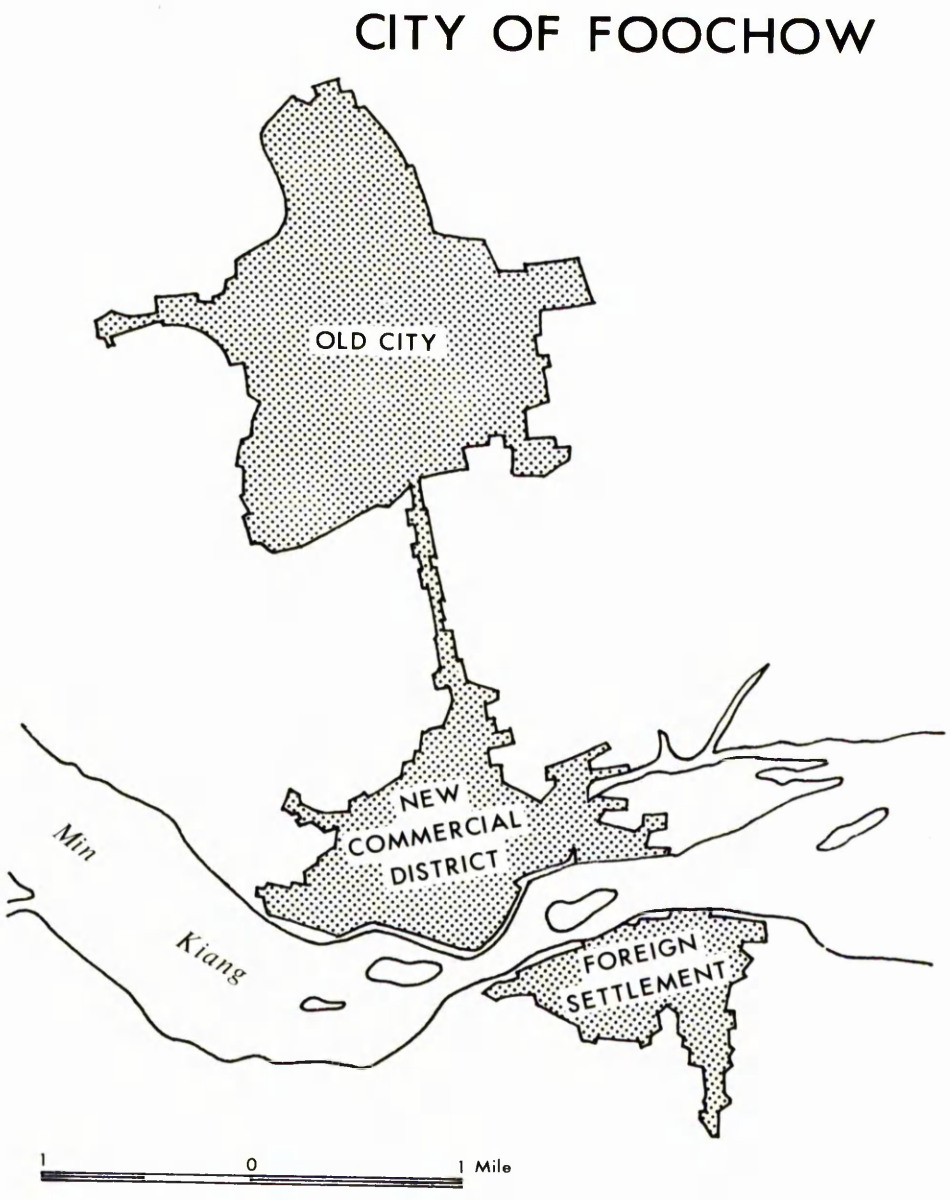
further suburban sprawl soon after Ningpo was opened as a treaty port. Chiangpei, across the Yüyao River to the northeast of the city, developed into a prosperous commercial suburb.[45] The geographical location of some of the coastal treaty ports, such as Foochow and Amoy, were not suitable for modern commercial maritime operations. They had been located deliberately some distance inland by the Ch'ing government as a preventive measure against pirates who plagued the coast in the first half of the nineteenth century. Thus, in order to conduct trade through these two cities, new port facilities had to be set up along the waterfront, which at a later date developed into a commercial and industrial suburb. One such suburban development was located about one mile south of Foochow, on the northern bank of the estuary of the Min Kiang (Map 2B). It contained wharves and piers, foreign commercial establishments and several industrial enterprises. A separate foreign settlement, largely residential, was later developed on the opposite bank of the waterway, forming a second suburban growth outside the old city of Foochow.[46]

Suburban Sprawl in the Treaty Port of Shanghai

Between 1842 and the end of the Imperial Era in 1911 many foreign settlements established at the treaty ports underwent continuous expansion, but none was able to match the scale of spatial growth that occurred in Shanghai within a span of eighty-five years (1845-1930).

The Treaty of Nanking signed on 29 August 1842

MAP 2B


CITY OF FOOCHOW
OLD CITY
NEW
COMMERCIAL
DISTRICT
FOREIGN
SETTLEMENT
Min
Kiang
1
0
1 Mile

conferred on the British subjects the right to trade, to reside, and to acquire land in Shanghai, one of the five treaty ports opened to foreign trade by virtue of that treaty. The Land Regulations of 1845 promulgated under the joint authority of the British Consul and the Taotai (Intendant of Circuit and Superintendant of Customs), representative of the Chinese Imperial Court, provided the legal basis for the British to set up the first settlement in Shanghai. The site of this foreign enclave was located in the northern suburb of the Chinese walled city, and the entire settlement occupied an area of approximately 830 mou (138 acres).[47] Most of the territory consisted of cultivated fields.[48] As the western boundary for the British Settlement was undetermined in the 1845 Land Regulations, a further agreement was made between the two official representatives in 1846. Thereby the western limit was fixed along the Defence Creek, a southern tributary of the Soochow Creek; and the northern boundary pushed northward to the southern bank of the Soochow Creek. These boundary changes subsequently enlarged the British territory to 2,820 mou (470 acres).[49] A second foreign settlement appeared in the northern suburb of Shanghai in 1849. Through a successful negotiation of a separate Land Regulation with the Taotai, the French established a settlement, called the French Concession, between the British Settlement and the Chinese City. It covered an area of 986 mou (164 acres).[50] The Treaty of Hwangsha signed between China and the United States at Canton in 1844 extended trade and residence rights in the treaty ports to American citizens. On 25

June, 1863, through an agreement reached between the American Consul-General and the Taotai, an American Settlement was set up for the first time on Chinese soil. It was situated on the northern bank of the Soochow Creek, extending along the Hwangpoo River, to the east of the British Settlement, but the exact territorial limits were not clearly determined in the agreement. On 21 September of the same year an agreement was made for amalgamation of the British and the American Settlements, forming officially the International Settlement.[51] Its boundaries, however, was not formally delimited until May 1893. Since then, the total area officially occupied by foreign settlements reached 12,630 mou (2,104 acres),[52] exceeding the size of the Chinese walled city at least four times. Since the founding of these settlements the foreigners had been busy building roads, homes, sewage and warehouses, and the original marshland and cultivated fields outside the old Chinese city were transformed into thriving urban communities.

The outbreak of the Taiping Rebellion in Kwangsi province, in 1851, greatly stimulated developments within the treaty port of Shanghai and brought changes to the surroundings of the settlements. The devastating civil war that affected many provinces in south and east China sent a large number of refugees flocking towards the foreign-controlled territories in Shanghai for safety. A Shanghai newspaper recorded:

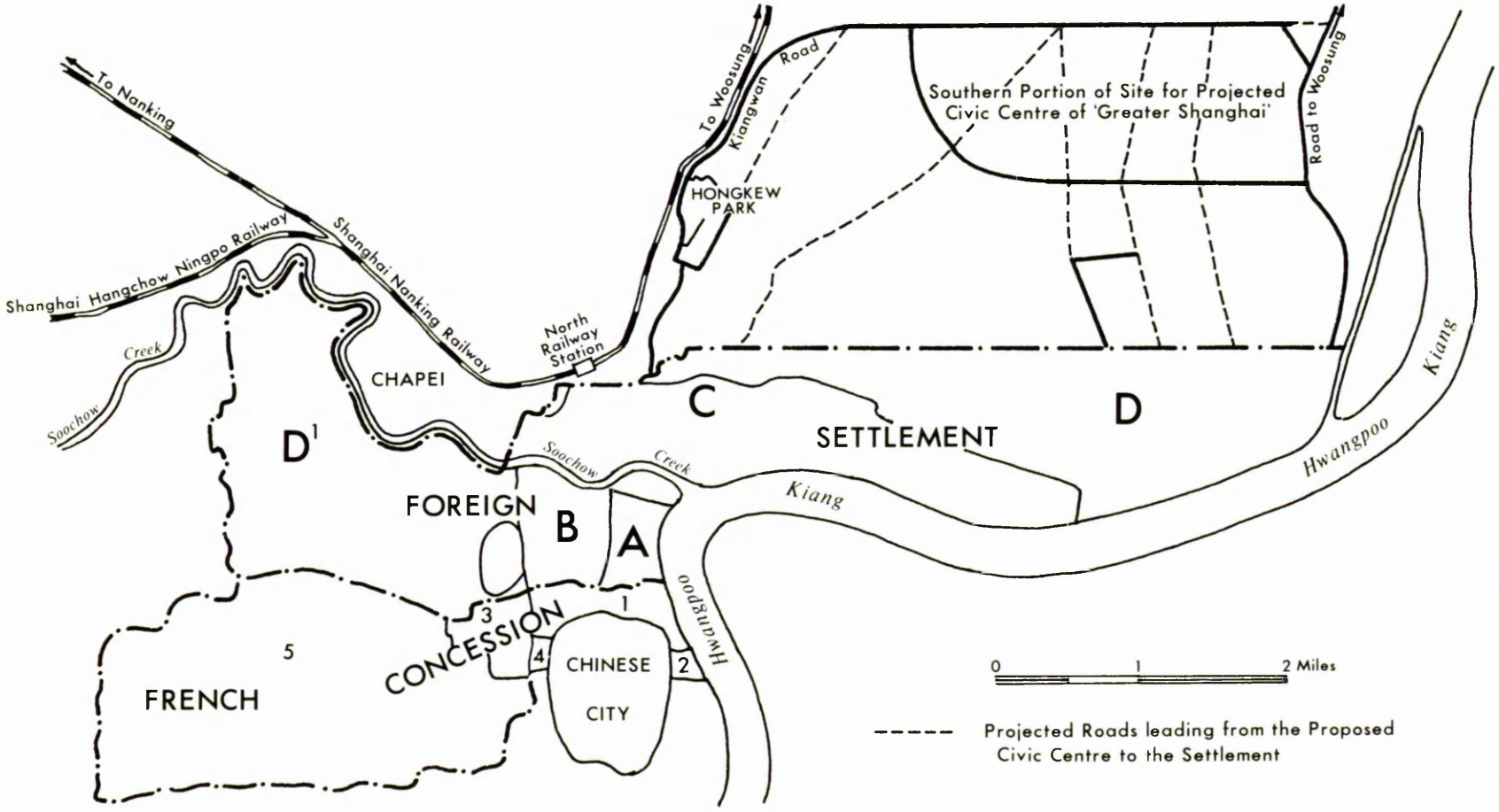
> ... The condition of affairs in Shanghai during autumn may be imagined from the fact, that, besides hundreds of thousands who were housed in some way or other, there were then ten thousand refugees living in

> the old race course. And one writer affirms that in an afternoon stroll he saw from forty to fifty thousand men, women and children, encamped in that neighbourhood and adjacent to it.[54]

The large number of these refugees which sought refuge inside the settlements engendered a marked increase of Chinese population in the foreign communities.[55] From a commercial point of view, this new development was not entirely unwelcome. Some foreign landowners found it an opportunity to make a quick and substantial profit by letting land or accommodation to the Chinese refugees.[56] When the Taiping Rebellion was crushed by the Imperial forces in 1864, the number of Chinese living in the Settlement was believed to be over 100,000. The 1865 Census registered a total number of 90,587 Chinese as permanent residents. A reduction to 75,047 was recorded by the 1870 Census. However, the Census of 1876 showed a figure of 95,662, and marked the beginning of a continuous increase in the number of Chinese residents in the Settlement. Within the next two decades, the figure rose to 240,995.[57] Among those Chinese refugees who sought security in the Settlement were wealthy entrepreneurs who brought with them their capital. This influx of wealth created the first sudden activities in land sales and speculation. Meanwhile, many foreign banks and shipping companies established their branch office. The enormous amount of shipping and trade attracted from overseas to the treaty port necessitated development of harbour facilities, wharves, docks and shipyards.[58] Before the end of the nineteenth century Shanghai had emerged as one of the most important ports in the Orient, rivalling Yokohama

and Singapore. The rapid increase of Chinese population in the Settlement, on the other hand, brought about acute shortage of space for further development. The Shanghai Municipal Council (the governing body of the Settlement dominated by the treaty powers) felt the urgent need for expansion into the suburbs. In 1898 amendment of the original Land Regulations and Byelaws were approved by the Taotai. The following year witnessed doubling of the area of the territory under the control of the treaty powers. An area of 11,377 mou (c. 1,896 acres) was added to the north of the Settlement, and 11,450 mou (c. 1,908 acres) to the west, making a total area 33,503 mou (c. 5,583 acres).[59] Since 1861 the French Concession also underwent several phases of expansion. Between that year and 1900 the French municipality incorporated 1,163 mou (194 acres) lying to the east and northwest immediately outside the Chinese walled settlement. A major expansion toward the west took place in 1914. Incorporation of all the extension roads built by the French administration in the western suburb added 13,001 mou (2,167 acres) to the Concession.[60] (Map 2C) At the beginning of the twentieth century the highly congested old Chinese city spilled out into the southern suburb, forming a densely populated and small industrial area, known as Nantao. A second expansion of Chinese urban area occurred in Chapeh, lying along the Soochow Creek, and to the north of the International Settlement. The third Chinese urban district was Pootung, a relatively narrow belt of warehouses, wharves and factories that lined the right bank of the Hwangpoo River.[61] In comparison the total area

HISTORICAL DEVELOPMENT OF FOREIGN SETTLEMENT AND CONCESSION IN SHANGHAI



Key to Map 2C

Foreign Settlement

		Mou	Acres
A.	First delimitation of boundaries Agreement dated 20 September, 1846	830	138
B.	Foreign Settlement. Agreement dated 27 November, 1848	2,820	470
C.	Area roughly defined as included in the "American Settlement" by agreement between the American Consul-General and the Intendant of Circuit, dated 25 June, 1863 incorporated with the Foreign Settlement by agreement of 21 Sept., 1863, and formally delimited May 1893.	7,856	1,309
D.	Settlement Extension, delimited 1899	11,377	1,896
D.[1]	" " " "	11,450	1,908
	Total Area of International Settlement:	33,503	5,583

French Concession

1.	Original Concession as delimited by agreement between the French Consul and Taotai Lin, on 6 April, 1849.	986	164
2.	Extension Proclamation dated 29 October 1861.	138	23
3.	Extension Proclamation dated 27 January 1900	909	152
4.	Controlled by French prior to 1849, but officially added together with (3), and noted in proclamation dated 27 January, 1900.	116	19
5.	Extension. Proclamation dated 20 July, 1914.	13,001	2,167
	Total Area of French Concession:	15,150	2,525

Source: Shanghai Municipal Council, Report, vol.1, parts 1-3, 1931, (Shanghai: North China Daily News and Herald Ltd., 1931),(end piece).

of these urbanized areas administered by the Chinese municipal authorities was much smaller than that of the International Settlement and the French Concession combined, although the entire Chinese municipality, mainly rural and agricultural in character, embraced an area of over 190 square miles.[62] This Chinese Municipality came into existence in 1906. It mainly served the purpose of restraining further expansion of the foreign settlements.[63]

The "External Roads Areas" at the Treaty Port

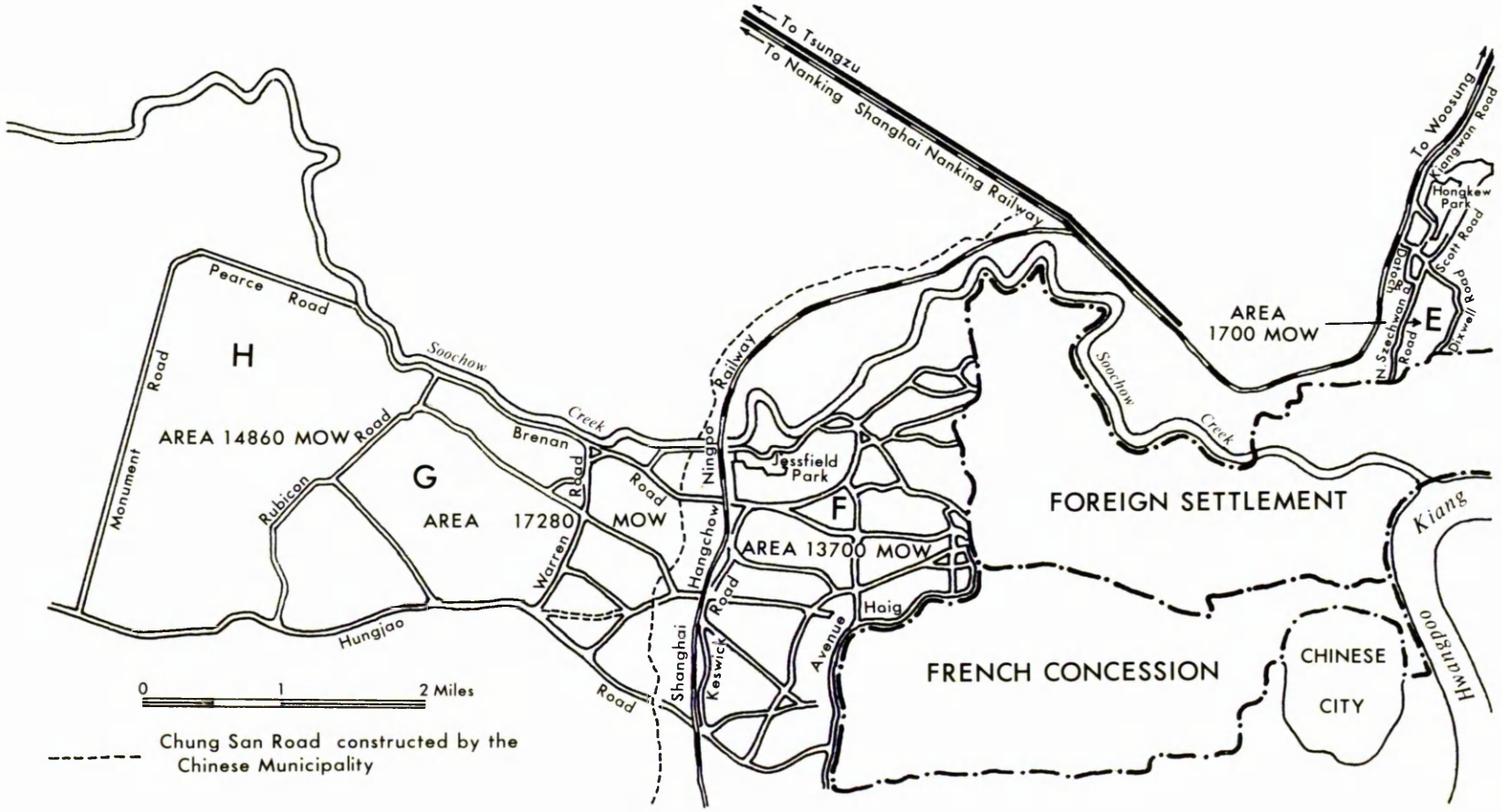
Construction of roads and parks outside the Settlement by the Public Works Department of the Municipal Council of Shanghai was initiated in the closing years of the Taiping Rebellion. Article VI of the 1869 Revised Land Regulations provided the legal basis for such practice.[64] The original overt intention of the municipal council to create the "External Roads Areas" was to make room for the rapidly expanding activities within the Settlement:

> The interests of the Settlement community, foreign and Chinese, are bound up in a variety of ways with these 'External Roads Areas', and while these areas are of great importance from the point of view of developments which may be expected in the future. If the Settlement maintains its position as a great commercial and industrial centre, and its development as such continues, the large numbers of persons employed in its offices, shops and factories must depend on these areas in an increasing degree, not only as affording additional space for residential purposes, but also, and more especially, to meet the pressing need for sites on which to carry on many activities, essential to the healthy life of a great community, for which the limited confines of the Settlement itself are already quite inadequate...[65]

Two of these "External Roads Areas" may be identified: the western section extends for 6 miles from the western limit of the Settlement to Monument Road. The northern side runs along Pearce Road and the southern bank of Soochow Creek, and the southern boundary follows the full length of Hungjao Road. The entire section covers an area of 7,640 acres. In contrast, the northern section is just over 283 acres. It lies to the north of the Settlement, and the Shanghai-Woosung Railway runs along its western boundary. (Map 2D) By 1925 there were already 48,093 yards of "dirt" roads built outside the Settlement, of which 43,005 were in the western section, and 5,088 in the northern section.[66] These road building activities within Chinese controlled territory lying to the west of the foreign communities set the stage for suburban sprawl of metropolitan Shanghai during the 1930s.

The upsurge in industrial development in Shanghai during the early 1900s contributed to the active advance of the urban frontier. Only a few decades earlier the city had only a few modern factories. Tseng Kuo-fan and Li Hung-chang established the Kiangnan Arsenal at Hongkew in 1865;[67] in 1886 several German merchants founded the Chen Yu Flour Mill;[68] and the city's first modern cotton mill was erected in 1889.[69] The urban landscape in Shanghai began to change drastically after the signing of the Treaty of Shimonoseki in 1896 between China and Japan. The Treaty granted all foreigners the rights to establish factories in the treaty ports. Consequent upon this new development a substantial number of modern textile mills and flour mills began to appear in Shanghai. By the early 1930s numerous cotton

EXTRATERRITORIAL EXPANSION OF FOREIGN SETTLEMENT IN SHANGHAI 1846-1914



spinning and weaving mills concentrated in the central part of the Settlement, especially along the right bank of the Hwangpoo River. Other major concentrations of cotton mills, paper mills and flour mills were located on both banks of the Soochow Creek, south of the Shanghai-Hangchow Railway, and a large variety of light industries formed a linear manufacturing belt in Pootung.[70] (Table 2.1)

TABLE 2.1 Number of Manufacturing Establishments in Shanghai 1931.

International Settlement	557
French Concession	251
District of Chapeh	574
District of Nantao	188
District of Pootung	117
Total:	1,687

Source: Statistics of Shanghai 1933, (Shanghai: The Shanghai Civic Association, 1933), p. 1.

The city spread westward along Bubbling Well Road (a continuation of Nanking Road) west of the race course (originally established on the outskirts). This suburban road was a country drive before 1930. Since then, however, large department stores, recreation clubs and halls, towering apartments, churches, and commercial buildings arose on both sides. These developments continued to send out tentacles in every direction, and they soon filled the entire area east of the legal boundary for the Settlement fixed by the 1899 Agreement.[71] Keeping abreast with the

active industrial growth and the booming building activities, the urban population underwent rapid increase. In 1910 it reached one million.[72] The metropolis became highly congested, as its average population density grew to more than three times that of London, five times that of New York, and slightly higher than that of Tokyo. Within the following two decades Shanghai's population further increased to three million.[73]

TABLE 2.2 Average Population Density in Shanghai 1930-1932 (no. of persons per sq. km.)

	1930	1931	1932
Greater Shanghai Municipality (Chinese controlled territory)	3,440.80	3,711.80	3,194.80
International Settlement	44,595.93	45,364.20	47,557.26
French Concession	42,544.72	44,619.57	46,825.04

Source: Statistics of Shanghai 1933, ibid., p. 1.

The overcrowded conditions in this thriving industrial city thus became even more serious. To avoid the ever deteriorating urban environment, foreign residents and wealthy Chinese began to move out to the western section of the "External Roads Areas".[74] The new development greatly stimulated the construction activities in this Western District. There is no surprise that out of a total of Tls.[75] 62,351,259 in building permits for 1931 the western suburb provided Tls. 16,940,944. This represented more than twice the amount for the French Concession and nearly half of that for the

TABLE 2.3 Increase of Foreign Residents in the External Roads Area (western section) 1870 - 1930

1870	52
1880	164
1895	441
1900	80*
1905	550
1910	1,260
1930	9,506

Source: Shanghai Municipal Council, Report, vol. 1, 1931, p. 50.

* Part of the "ERA" (the western section) was incorporated into the International Settlement in 1899.

International Settlement. By comparison with the 1925 figure it was an increase of nearly seventeen times.[76] The upsurge in building activities changed the urban-fringe landscape. In the middle of the 1920s the roads outside the Settlement ran through the agricultural countryside with here and there a Chinese village or a lonely foreign residence, but within several years the district became a pleasant residential suburb with beautiful homes and their spacious gardens occupying the entire lengths of many external roads.[77] The good accessibility provided by these roads and cheaper land further encouraged the spread of suburban developments farther from the built-up areas of the treaty port. In the early part of the 1930s an irregular pattern of suburban growth appeared in the eastern section of the "External Roads Area", lying between the western limits of the Settlement and the Shanghai-Hangchow Railway. Here recreational, institutional, educational and horticultural land uses were present;[78] and in 1931 many factories

and shops appeared.[79] The entire area, as a result, resembled the "twilight zone" typical of many western cities in modern times. This belt of chaotic development and mixed land use continued to expand rapidly. The fast rate of suburbanization in this world city prompted the following comment:

> It is not too much to predict that in a few years' time a suburban Shanghai, very much like suburban London, will come into existence.[80]

Development of North Suburban Shanghai

Indeed, while the city was sprawling actively westward, a new development, known as the Kiangwan Civic Centre Scheme, took place in the outskirts north of the International Settlement, lying between the Shanghai-Woosung Railway and the Hwangpoo River. (Map 2C) The creation of this urban area was a single phase of an ambitious and comprehensive plan, launched by the Chinese municipal authorities, to build a modern planned city of Shanghai. At the completion of this first stage of the plan, the centre of the metropolis would be shifted from the International Settlement to the Kiangwan Civic Centre, where vital administrative, economic and social activities of the entire city were to take place. Also this future city centre would be the first urban area built according to a pre-conceived plan in modern China.

The beginning of 1928 witnessed the unification of China, a short time after the Northern Expedition came to a

successful conclusion. This allowed the Kuomintang (the Nationalist Party) to inaugurate its national reconstruction programme, part of which included redevelopment of land use zoning for many of the existing cities. Some of these plans involved very elaborate planning, such as the garden city scheme for Nanking, capital of the Nationalist government; and the expansion of urban areas for Canton, Kunming, Fengt'ien (Shenyang), Nanchang, Fushan, and Chuangchiakuo.[81] None of these, however, could surpass the comprehensive Development Plan drawn up by the Committee on Reconstruction for the "Special Municipality of Greater Shanghai".

The primary motive for implementing such an extensive urban development project for the metropolis was fundamentally political in nature, strengthened by the growing national consciousness and aspirations which prevailed since the founding of the Republic of China. Near the end of the Imperial Era, many traditional Chinese cities were in an advanced state of decay, characterized by dark, narrow and winding streets, ill-odour, repulsive filth and squalid conditions. In strong contrast, the treaty ports and the industrial cities in Manchuria under foreign administration grew and emerged as centres of great economic importance. The existence of Shanghai and other treaty ports under foreign control had become an increasing grievance to the politically minded Chinese. There was a general demand on the part of the Nationalist government and other Chinese bodies to bring about the handing over of foreign settlements to the Chinese authorities.[82] Also the time would come when the Chinese could argue that their municipality

was as good as the foreign settlements, and therefore the ultimate intention in creating a modern planned city next to the treaty port of Shanghai was no doubt to cajole the treaty powers into agreeing to the merging of the foreign settlements into Chinese controlled territory.[83] In his speech on the objective of the development scheme for Greater Shanghai, Marshall Sun Chuan-fang stressed:

> It is necessary to create an organization in Shanghai to unite all the administrative powers into one centre so that it might have the necessary authority to improve the municipal government, plan a new port, and settle diplomatic disputes, gradually converting the area outside the foreign settlements into a model city, the result of which should form the basis for our demand for the abolishing of foreign concessions.[84]

The Greater Shanghai development programme was certainly the most comprehensive for one single urban settlement and its surrounding areas in the history of city planning and building in China. This planned urban and suburban development covered an area of almost 200 square miles. The entire scheme included provisions for flood prevention and harbour improvement; construction of ports on the southern bank of the Yangtze, railway connections, river crossings, arterial highways, and a modern civic centre.[85] The preliminary plan proposed construction of a highway network to serve a large number of wharves along the Hwangpoo River from Woosung to the village of Yinghsiang-kong. Anticipating substantial increase in the volume of railway traffic, the planners proposed construction of a branch line of the Shanghai-Nanking Railway, from Chenyu to Woosung via Taichang Village, and another branch line

to be built from Lunghua to Chenyu, connecting the Shanghai-Nanking Railway and the Shanghai-Hangchow-Ningpo Railway. An industrial area was to be built in the northwestern suburb of the Kiangwan Civic Centre. Consideration of environmental protection formed the basis for the selection of this site; the prevailing winds would carry the smoke and dust from factories away to uninhabited areas. Other manufacturing districts were planned for Lunghua, Kaochang-miao and Pootung. While most of the Greater Shanghai Development Scheme was still in the preliminary planning stage, the initial phase of the project involving construction of the Kiangwan Civic Centre was well under way in 1929. The central part of this urban district was occupied by municipal offices, and public buildings and facilities.[86] The area to the north of the administrative nucleus was zoned for commercial use. Outside the business district were the residential zones. Approximately 170 acres had been reserved for parks, open squares and boulevards.[87] The first stage of the civic centre project was started in 1929, over 7,000 mou (Over 1 1/2 square miles) of suburban land located within the site for the proposed city centre were purchased by the Shanghai Municipal Planning Commission.[88] Following the land purchase remarkable progress was made. In 1935, the Mayor's Building, one of the most important buildings in the administrative complex, was completed, and the Public Library, the Museum and the Sports Centre were in an advance stage of construction.[89] Other buildings completed early in 1937 included the City Hall which housed the Bureaus of Public Works, Social

Affairs, Land Administration, Health and Education, and other buildings for the Bureaus of Finance and Public Utilities.[90] Further progress was seriously handicapped, however, when Shanghai was sieged by the Japanese army in August, 1937, and construction work at the Civic Centre came to a standstill during the Japanese occupation.[91] Construction work was not resumed at the end of the Sino-Japanese War in 1945, due to the ensuing outbreak of the civil war between the Nationalist and the Communist, which was fought over vast territories in China until September 1949.

Summary

Unlike the West, China experienced a long and lasting tradition of symbiotic association between urban aristocrats and peasants residing in the extramural areas. The physical siting for the early walled settlements and the social structure of Chou feudalism laid the foundation for such a relationship. It was subsequently strengthened by the erection of the outer walls for protecting the food producing suburban residents when frontier war became frequent during the East Chou period. Although at times the building of the second wall may have served to contain sprawling cities, the double-walled morphology of cities continued to be a symbol for traditional values which persisted almost to the end of the Imperial Era. Changes detrimental to the urban/suburban relationship occurred in the treaty ports introduced by foreign powers since the mid-nineteenth century. These trading settlements were orig-

inally small foreign enclaves outside the walls of Chinese cities, but many of them had become the country's largest cities and important industrial centres within less than half a century. As exemplified by the treaty port of Shanghai, western expansionism and semi-colonialism constituted a major force that continuously pushed the urban fronts into the suburban territories, replicating the same problem of urban encroachment of suburban agricultural land that prevailed in many of the post-industrial revolution western cities. After the Kuomintang had secured political stability in the 1920s, ambitious plans for developing the entire Shanghai Municipality and other cities were launched, in order to compete with the foreign powers in their achievements at the treaty ports. These urban development schemes were by and large a contemporary western approach, and they did not contribute to enhancing the relationship between city and countryside in China. The following chapters will investigate and analyse the active changes of China's suburban landscapes engendered by the grand scheme of nationwide city building and transformation of the CCP from 1949 to 1959.

CHAPTER 2 - NOTES

1. Eberhard, W., Conquerors and Rulers: Social Forces in Medieval China,(Leiden: E.J. Brill, 1952), p.10.

2. Hsu Cho-yun, Ancient China in Transition: An Analysis of Social Mobility, 722-222 B.C., (California, Stanford: Stanford University Press), p.137.

3. Chang Sen-dou, "The Morphology of Walled Capitals", in Skinner, G.W.,(ed.) The City in Late Imperial China, (California, Stanford: Stanford University Press, 1977), p.99.

4. Ginsburg, N., An Historical Atlas of China (Herrmann, A., original editor), (Edinburgh: Edinburgh University Press, 1966), p. 13.

5. Yoshinobu, Shiba, "Ningpo and Its Hinterland", in Skinner, G.W.,(ed.) The City in Late Imperial China, (California, Stanford: Stanford University Press, 1977), p.397.

6. Chang, (1977) op.cit., p.99.

7. Erh-ya is the first dictionary and encyclopaedia published in China. Scholars are not certain of its compiler or the date of its publication. One school believes that the first chapter was compiled by Chou Kung-tan, and the other three chapters which prevailed during the dynasties of Han and Wei were supplemented by Confucius or his student, Tzu-hsia, or by Ssu Sun-tung. Another school believes that the volumes have a very early origin, and have been supplemented by scholars of succeeding dynasties until its final completion in the Han dynasty. It is an indispensable reference work aiding research on ancient Chinese classics and study of Chinese characters, phrases and terminology originated before the Ch'in dynasty.

   According to Han Shu (Book of the Han), Erh-ya consists of three volumes, with twenty chapters. The version still in existence has three volumes, divided into nineteen sections. The first three sections explain meanings of words and phrases, the other sixteen sections are encyclopaedic. It is important to note that four of these sections are devoted to explanations of geographical terms, other sections contain descriptions of social conditions of ancient China, and explanations for terminology of astronomy, zoology and botany.

   As Erh-ya is one of the most incomprehensible Chinese classics, one has to rely on its commentaries, compiled by scholars of later times, when studying this classical volume. One of the best known commentaries was compiled by Ko Po of the Chin dynasty. See Liu Yeh-chou, Dictionaries of Ancient China, (Peking: Hsin-hua shu-tien, 1963), pp. 81-82.

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CHAPTER 3

FOUNDATION FOR PLANNED SUBURBAN DEVELOPMENT IN POST-1949 CHINA

Introduction

The Chinese Communist Party (CCP), under the leadership of Mao Tse-tung since 1931, was preoccupied with rural land reform and reorganization within the Party in the Kiangsi-Soviet base, as well as winning over the peasantry in support of the Communist cause. Therefore, for more than two decades, despite the strong commitment of the CCP leadership to achieve economic progress through the development of industry,[1] little attention was given to formulating policies towards accomplishing such a goal. It was not until April 1945 that Mao began to spell out the Party's economic strategy. He issued a very important document, advocating industrialization as the key to effective national defence and modernization for China:

> In order to defeat the Japanese aggressors and build a new China it is necessary to develop industry... Without industry there can be no solid national defence, no well-being for the people, no prosperity or strength for the nation.[2]

He continued to elaborate this policy on China's industrialization:

> When the political system of New Democracy[3] is won, the Chinese people and the government will have to adopt practical measures in order to build heavy and light industry step by step over a number of years and transform China from an agricultural into an industrial country...[4]

The defeat of the Kuomintang (KMT) army in the well-known "Huai Hai Military Campaign"[5] in January 1949 marked a crucial turning point in the military endeavours of the Chinese Communists, although the latter began to take more military initiative after 1937. Following the fall of Hsuchow in spring of the same year, the Communist forces captured an increasing number of important industrial centres, seaports and provincial capitals. More significantly, they were able to hold the captured cities firmly under their control for the first time. From then on, the CCP began to reappraise its policy of strengthening the revolution in the countryside and turned its attention to administering and developing the cities, laying the foundations for the initiation of the nation's industrialization programme. In the Second Plenary Session of the Seventh Central Committee of the CCP, held at Hsipaipo Village, Pingshan Hsien, Hopeh Province from 5 to 13 March 1949, Mao Tse-tung made an epochal declaration:

> The period of from the city to the village and of the city leading the village has now begun. The centre of gravity of the Party's work has shifted from the village to the city.[6]

The political role of cities was equally significant, as Mao remarked in the same report that the ruling power of the new government could be consolidated only when production in the cities was restored and developed, and when existing "consumer cities" (hsiao-fei ch'eng-shih) were transformed into "producer cities" (sheng-ch'an ch'eng-shih).[7]

With the emergence of this new policy, the cities

were regarded as centres of technological change in the future, and held the key to economic modernization and industrialization of the nation. Hence, since early 1949 much effort was expended by the CCP to prepare the groundwork for city building and industrial expansion. One such task was to draft and to implement a land legislation specifically for the suburban areas.

Promulgation of the Suburban Agrarian Reform Law (SARL) 1950

Although rural agrarian reform involving land confiscation and distribution, and reduction of land rent had been carried out in Communist held territories since the early thirties, no definite land legislation or implementation procedure were issued.[8] The first official agrarian reform regulation, known as the "Outline Land Law of China", was passed by the National Land Conference of the CCP on 13 September 1947, and promulgated on 10 October of the same year.[9] In this land legislation, no mention was made of methods for dealing with suburban land in Article 9 which was concerned with the administration of mainly non-arable lands, collectively called 'special lands'.[10] Such omission reflected the concentration of Communist efforts in implementing land reform in rural areas at that time.

When the new government was officially established in Peking on 1 October 1949, the CCP had already had more than three decades of experience in rural agrarian reform. However, implementation of a similar programme in the suburban areas was quite a different matter. This was partly

because the Communists had not been able to retain military or administrative control over any large city until the final stage of the revolution, as related earlier. Most important of all, the land use pattern, land ownership system, and socio-economic characteristics of the inhabitants of this geographical territory proved to be far more complex than those of the rural areas. As soon as the Communist forces gained firm control over most of the urban centres in China early in 1949, initial steps in formulating a separate suburban land reform regulation were undertaken by some municipal governments. By late 1949 the local authorities of Peking and Tsinan passed a special resolution concerning the problems of suburban land reform in accordance with the distinct land use, land ownership and demographic characteristics of the two cities' suburban areas.[11] Following these, on 13 January 1950, the Government Administrative Council (GAC) issued the "Directive concerning Problems of Suburban Agricultural Land in the Old Liberated Areas".[12] This decree, together with the Agrarian Reform Law (ARL) provided the vital framework for the subsequent land legislation known as the "Suburban Agrarian Reform Law" (SARL) that was to be enacted in the suburban areas of the nation. Clearly, the directive was specifically designed to deal with special problems relating to possible transformation of agricultural land into urban use and commercial agriculture. Essentially, it contained the following specifications:[13]

> 1. All land and other property confiscated or expropriated are to be placed under state ownership in order to meet (future) urban reconstruction and industrial development.

> 2. All land and buildings connected with industry are to be left intact... Landlords are allowed to invest in industry and trade. Industrial and commercial enterprises owned and operated by landlords or rich peasants are not subjected to confiscation or expropriation.
>
> 3. All farms, market gardens, orchards and experimental farms using machines or advanced techniques and equipment are to continue operation under their existing owners.

Before the promulgation of the directive, it was applied on an experimental basis to a selected number of villages in the suburban areas of the newly occupied cities of Peking and Tientsin, North China.[14] The same approach was used in suburban Shanghai, Nanking, Canton, and other cities, even after the promulgation of the Suburban Agrarian Reform Law. The experimental land reform in the two north China cities proved to be a success. It provided valuable practical experience to the administrating cadres involved in land confiscation, requisition and distribution. Also the results of investigations on suburban characteristics carried out simultaneously with the campaign contributed needed information for the planners to draft up the Suburban Agrarian Reform Law[15] that was later promulgated at the 58th Meeting of the GAC on 10 November 1950.

The Suburban Agrarian Reform Law: A Brief Analysis

As noted earlier, the formulation of this land legislation was based on the "Directive on the Disposal of Suburban Agricultural Land in the Old Liberated Areas", the Agrarian Reform Law, and the practical experience gained in the "testing grounds" of suburban Peking and Tientsin.

The Suburban Agrarian Reform Law consisted of twenty-one articles; only half as many as in the Agrarian Reform Law.[16] Twelve of the articles in the former were specifically drafted to cope with special problems prevailed in the designated suburban areas. The others that concerned mainly land confiscation and requisition, (Articles 3,4,5, 6 and 7) certain aspects of land distribution, (Articles 9 and 10) and land administration (Article 16) were adopted primarily from the Agrarian Reform Law. Basically, the Suburban land law contained the following six major items:

1 Principal Objectives	Article 1
2 Instructions on Designation of Major Cities and Demarcation of Their Suburban Areas	Article 2
3 Land Confiscation and Requisition	Articles 3,4,5,6, 7 and 8
4 Land Distribution and Compensation	Articles 9,10,11,12, 13,14 and 15.
5 Institution and Methods for Implementing the Law	Articles 16,17 and 18.
6 By-laws	Articles 19,20 and 21.

In terms of their primary objectives, both the ARL and the SARL share some common ground, reflecting the economic goal of "New Democracy" to develop industrial production through transformation of the agricultural economy:

> ... abolishing the landlord class and the feudal usurious land ownership system... liberating the rural productive forces, developing agricultural production, and so paving the way for the industrialization of new China.[17]

The SARL was an example of national legislation designed essentially for land acquisition within officially delimited suburban areas. Thus, it contained a number of provisions that dealt with exclusively legislation and administration of suburban land, constituting the major difference between the two land laws. As stated in Article 1, one of the main objectives of formulating the suburban land legislation was to cope with the needs of urban reconstruction and the growth of industry and commerce. More specifically, through implementation of the SARL, land lying outside built-up areas or city walls was to be set aside to provide construction sites for industrial plants and commercial enterprises, as well as room for planned urban expansion. Another principal objective stipulated development of suburban agriculture, implying reservation of suburban land for market gardening or producing subsidiary foods to meet the needs of the growing urban population.

Land Nationalization

The most significant feature of the suburban agrarian reform campaign was the institution of state ownership of land resources. It applied to both arable and non-arable land in the suburban areas.[18] The formulation of such a policy was apparently influenced by the socio-economic characteristics prevailing in pre-1949 suburban China: the complex pattern of land ownership, the exploitative tenancy system, the prevalence of land speculation,

and the presence of a significant amount of burial land.

According to the statistics collected during a survey conducted in Kueifang, Pachiu, Luliangchuang, Peiwu, Lungho, Shiaohungmen and Chayin, the seven villages selected for the suburban land reform experimentation in the "far suburb"[19] of Peking in November 1949, the landlord class constituted only 8.78 per cent of the total population, and yet owned 44.1 per cent of the arable land. On the other hand, 44.4 per cent of the inhabitants, classified as poor peasants and tenant peasants, possessed only 9.3 per cent of the total cultivated acreage.[20] The concentration of arable land in relatively few hands was even more striking in south China, as revealed by the statistics of the fifteen sample villages in the suburban areas of Canton, collected during the experimental land reform of that locality; here, 5.53 per cent of the population were of the landlord class, but owned as much as 60.79 per cent of the cultivated land.[21] The result obtained in a land ownership survey in Hsikehsu, a suburban district outside Nanking during the suburban land reform campaign was equally astounding. Four households of landlords owned about 10,000 mou (c. 1,667 acres) of agricultural land. In Chianghsinchou, another suburban district of the city, landlords possessed one-third of the 20,000 mou (c. 3,300 acres) of farmland. On the average, this group of land owners occupied 50 to 100 mou (c. 8.3 to 16.7 acres) in the "near suburb".[22] Indeed, the pattern of land ownership in rural China in 1934, as shown in Table 3.1 suggests the landlords in rural areas owned a comparatively much lower percentage of farmland than

its counterpart in the suburban areas.

TABLE 3.1 Pattern of Land Ownership in Rural China 1934.

	Per Cent of Total Farming Household	Per Cent of Land Owned
Landlord	3	26
Rich Peasant	7	27
Middle Peasant	22	25
Poor Peasant	68	22

Source: Wu Wen-hui, Chung-kuo ti tu-ti wen-t'i yu cheng-ts'e (The Land Problem and Policy in China), (Chungking: The Commercial Press, 1944), p. 128.

In the metropolitan suburbs, the land ownership system was further complicated by a greater proportion of absentee landlords than in rural areas. For example, in the suburban areas of Peking large tracts of farmland were owned by government officials and members of the military, There were 4,906 landlord households in this entire suburban area, but over 29 per cent did not engage in farming. Instead, these land owners managed business and operated industrial enterprises in the capital. Further, among the industrialists and merchants residing in Peking, 404 households possessed 11,750 mou (c. 1,960 acres) of arable land, which amounted to 10 per cent of the total cultivated land in the suburban areas.[23] In metropolitan Shanghai, the most industrialized and foreign-dominated city in China, the suburban farmland was owned by residents of all walks of life: local and foreign capitalists, land and property transaction agents, compradors, government officials, factory workers, white collar workers, pedlars, labourers,

self-employed, shopkeepers, and civil servants.[24] The survey of a village in the Hsinching District located to the west of Shanghai substantiated a complex pattern of land ownership. Among the 270 mou (c.45 acres) of land in the village, 36.95 mou (c.6.15 acres) were owned by landlords, 37 mou (c.6.2 acres) by rich peasants, 30 mou (c.5 acres) by industrial or commercial entrepreneurs, 14 mou (c.2.3 acres) by foreigners, 147 mou (c.25 acres) by middle and poor peasants, and 5.05 mou (less than 1 acre) by factory workers and pedlars.[25] In this example, most of the land in the village was in the hands of landlords and other peasant groups, as in rural areas. One very important distinction should be made, however. Other owners of land were all urban residents and did not participate in farm labour. These characteristics inevitably reflected one of the influences of large urban settlements upon their surrounding areas.

High population densities were typical in the urban fringe areas of China. For example, in the District of Lu-hsing in Shanghai's suburb, the population density reached 427 persons per hua-fang-li (one-ninth of 1 square mile) an equivalent of 3,843 persons per square mile. The average population density of the eight suburban districts surveyed was 2,610 persons per square mile.[26] Such high concentration of population in suburban China brought about a much higher population pressure on agricultural land resources than in rural China. In Peking and Canton the average amounts of arable land per person in the suburban areas were only 1.8 mou and 0.78 mou respectively.[27]

According to a survey in the "near suburb" of Nanking, among the farm population, the average size of farmland per capita was 1.04 mou, and the minimum size 0.56 mou.[28] In the suburban districts of Shanghai (Map 3A) the average figure was as low as 0.69 mou per person. (This figure was derived from Table 3.2).

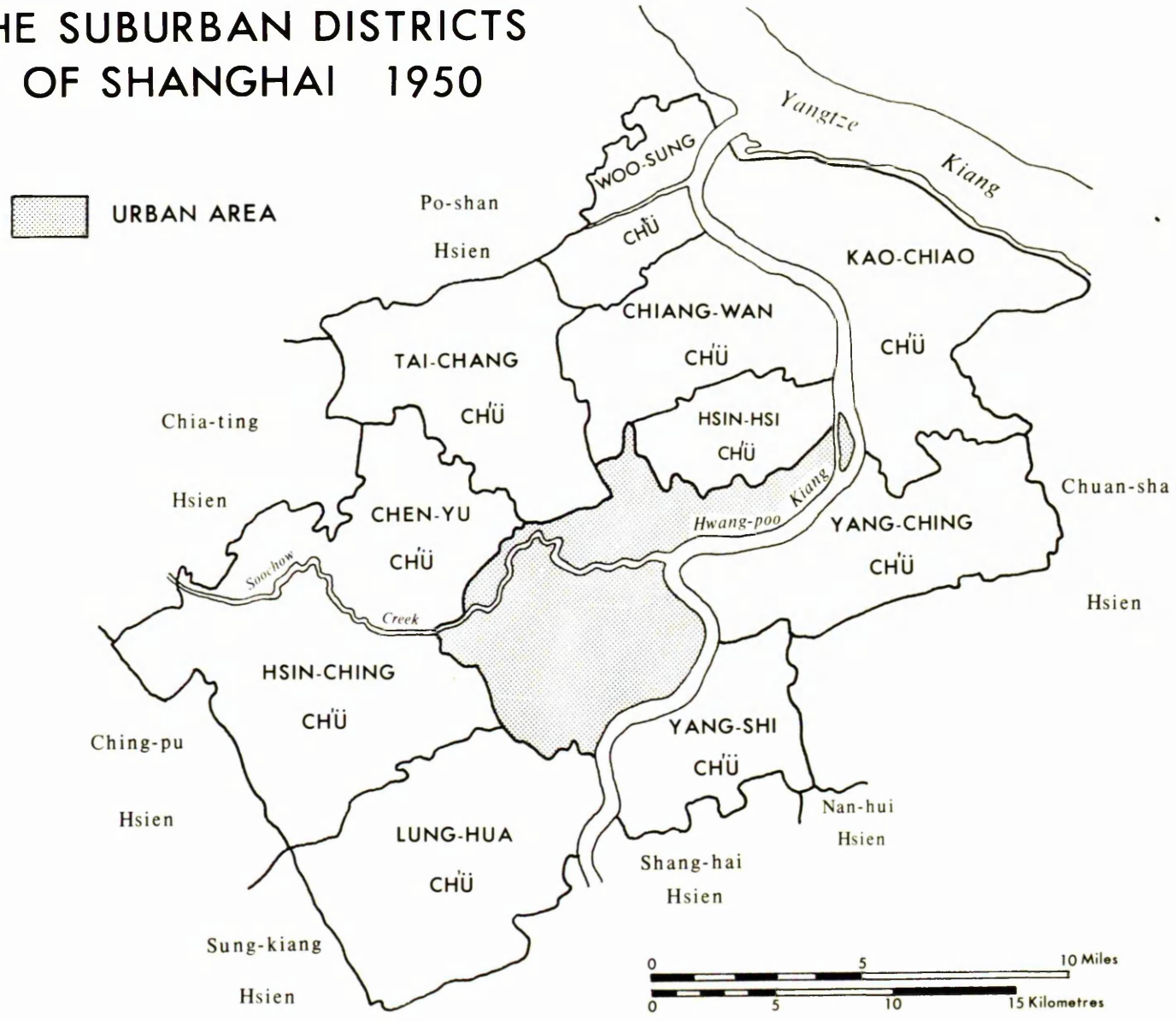
TABLE 3.2 Ratio of Population and Cultivated Land in Shanghai's Ten Suburban Districts, March 1950.

Name of District	Population	Cultivated Land (mou)	Density (mou per person)
Lunghua	92,856	94,933	1.02
Chenyu	54,215	41,390	0.76
Hsinching	165,861	80,167	0.48
Taichang	52,424	57,321	1.09
Chiangwan	35,648	27,403	0.76
Hsinhsi	53,185	14,054	0.26
Woosung	33,662	14,631	0.43
Yanghsi	66,403	31,413	0.47
Kaochiao	67,110	84,871	1.26
Yangching	210,457	65,283	0.39
Total:	831,821	511,466	Average Value 0.692

Source: Hsin-wen jih-pao (News Daily), Shanghai, 2 April 1950.

Both the high population density and the concentration of a large amount of arable land in the hands of relatively small numbers of absentee landlords provided an explanation for the large numbers of tenant farmers in suburban China. In a village of Woosung District, a suburban district to the north of Shanghai, over 96 per cent of the peasants rented their land.[29] In contrast, the average rate of land tenancy was about 25 per cent in Kiangsu province,[30]

THE SUBURBAN DISTRICTS OF SHANGHAI 1950



and the national average 33 per cent.[31] Tawney observed the prevalence of a usurious system of land tenancy outside China's big cities as well as in rural areas:

> A result of the growth of absentee ownership is the employment of agents, who relieve the landlords of the business of himself squeezing his tenant, browbeat the tenants by threats of eviction into paying more than they owe, and making money out of both by cheating the former and intimating the latter.[32]

Often such a system resulted in the inability and the lack of incentive of tenant farmers to contribute to general agricultural development, which constituted one of China's major agrarian problems.

As in many western city fringe areas, land speculation prevailed in China's suburban areas. Some of the land owned by absentee landlords was held for speculative purposes, because of the quick and attractive profit that could be derived from investment in land. Tawney remarked that the presence of a class of absentee land owners, whose connection with agriculture was purely financial, was most apparent in the neighbourhood of great cities in China, especially in districts where the expansion of commercial and industrial activities disturbed the static conditions of suburban life. One important symptom associated with such development was land speculation.[33] As a consequence, some of the land in the fringe areas became virtually unavailable for future planned development of urban centres. These "dead" lands often presented obstacles to the selection of sites for factories and commercial development, and hampered the orderly or planned growth of cities. Speculation also caused an artificial shortage of land,

leading to rapid inflation of land price, especially when the demand for land increased as an urban centre grew. Furthermore, frequent change of land title that characterized the speculative and free land market system posed serious problems to agricultural development in an area where land was potentially productive.

It should be pointed out that in the suburbs of China, a significant percentage of the agricultural land was occupied by burial lands - a commonplace phenomenon in agrarian China. These consisted of small plots of only two or three mou (less than half an acre) in area. Generally owned by inhabitants of the city, the land was actually taken out of agricultural production and reserved specifically for the purpose of future burial of the owner or members of his family. In the eight Shanghai suburban districts surveyed, the total acreage of burial land amounted to 24,536 mou (c.4,090 acres), constituting 6.2 per cent of the total agricultural land. The burial lands actually exceeded the percentage of homestead land and fish ponds which occupied only 5.1 per cent and 4.2 per cent respectively.[34] According to Buck's survey of 16,059 farms in 22 provinces in China, the land in graves or land potentially used for burial purposes in rural areas occupied 1.9 per cent of the agricultural acreage. He remarked that idle land of this type constituted a real problem in China not only because of the land actually removed from cultivation but also because of the obstacles it presented to farming operations.[35] Judging from the above evidence, such a problem was evidently acute in suburban agricultural land.

When the suburban land reform legislation came into effect, all burial land in suburban areas certainly would be placed under state ownership and assigned for industrial and commercial uses or agricultural production.

In anticipation of impending municipal and industrial development in the suburban areas, all farmland confiscated from industrialists and commercial proprietors, or other absentee landlords, was nationalized and distributed, on a temporary basis, to the peasants for tillage. The recipients were issued a certificate for using state land. Unlike peasants in the rural areas, who became new land owners, were permitted to manage, buy, sell or rent out their land freely,[36] the suburban farmers were not allowed to sell or lease out state land. It was stipulated in Article 12 that all distributed state land must be returned to the authorities when no longer used by the original tiller for agricultural purposes. The objective of this policy was to put all arable land in the suburban areas to productive use, while at the same time making land available for industrial sites and municipal construction whenever those needs arose.

While croplands owned by landlords and rich peasants were confiscated and nationalized, other peasant groups, like their counterparts in the countryside, were allowed to own land. Also, they could dispose of their land at will. As stated in Article 8, private ownership of land was limited to the land belonging to and cultivated by middle peasants (including well-to-do middle peasants), poor peasants and hired farm labourers.[37] These land recipients were

issued certificates of land ownership for the protection of their property rights. In the event that the government needed land for municipal development or industrial construction, privately owned land in suburban areas would also be acquired.

According to Articles 13 and 14, whenever state land was retrieved from peasants, or privately owned land expropriated by the authorities, proper provisions and compensation would be given. Generally, these provisions and compensation were in the form of land exchange, but seldom in cash payments. If peasants who returned or gave up their land decided not to continue farming, they would be absorbed into the industrial work force in factories, or as labourers at the construction sites where their fields were located. In all probability such arrangement would have been acceptable to the peasants since factory workers earned a higher wage and enjoyed a better life.[38] For the administration no monetary compensation would then be necessary for retrieving state land or expropriating land. Furthermore, it would help to alleviate the traditional problem of high population pressure on the meagre arable land available in the suburban areas.[39]

It is significant to point out, finally, that the policy of land nationalization implemented by the Peking government deviated from that advocated by Sun Yat-sen, founder of the Republic of China. According to his outline plan for the projected port city located between Chapu and K'anpu, at the mouth of Hangchow Bay: that portion of the land to be used immediately for development would be purchased

at current market price by the government; the unused portion of the land within the planned area would be nationalized, and thus withdrawn from private transaction it could, however, be retained for use by the original owners; and, last, when more land was required for development, it could be purchased by the state at the originally fixed price.[40] Such a land acquisition policy was not adopted by the new administration for two major reasons. As Sun's land acquisition scheme was only meant to apply to a few specific projects, the land markets existed in cities and their fringe areas were not affected. Thus, the policy would not bring an effective solution to many problems that were prevalent in China's suburban areas, particularly hoarding of land for speculation, since any suburban land located outside government planned projects could still be bought or sold freely. Secondly, implementation of such a policy required both strong administrative and financial backing which the Peking government was lacking at that time. Besides, it may be argued that to nationalize land within the suburban area, even at the initial stage of the agrarian reform campaign, would not pose a serious administrative problem to the government; as noted earlier, a substantial proportion of land confiscated in the suburban areas was originally owned by a relatively small minority of absentee landlords.

Promotion of Industrial and Commercial Development and Suburban Agriculture

To promote industry and trade in cities, the

suburban land legislation was designed specifically to provide land necessary for the planned spatial development of these two modern sectors of the economy. The authorities made available state land for building factories, warehouses, and wholesale and retail outlets by private investors.[41] Also, Article 5 in the "Regulations for Implementing Agrarian Reform in the Suburban Districts of Shanghai" - a local supplementary regulation of the SARL - specified that if it was guaranteed that land would be used for constructing factories or commercial buildings within a period of three years from the date of promulgation of the Regulation, it would be requisitioned but not be distributed to the peasants.[42] As an additional measure to stimulate development of trade and industry, businessmen and industrialists were given priority to select sites for construction at very low cost.[43] The payment for using land for building industrial plants and commercial outlets was generally in the form of nominal utilization fees or rent, which would be similar to that implemented by the Peking Municipal Government in January 1952.[44] In passing, all these incentive measures were by no means long-term policies; their adoption during the early days of the new administration should be regarded as a form of stimulant to the rapid recovery of the nation's economy.

Although the SARL was basically a land legislation measure, it contained provision for exemption from confiscation of all capital investments in privately owned industry and commerce in suburban areas during the course of the suburban agrarian reform. This specific measure was

made known early in 1948, when Mao commented on the policies concerning industry and commerce:

> A sharp distinction should be made between the feudal exploitation practised by landlords and rich peasants, which must be abolished and the industrial and commercial enterprises run by landlords and rich peasants, which must be protected.[45]

The policy was first instituted in the rural land reform campaign, as industry and trade were fairly well developed in some rural areas and where large numbers of landlords simultaneously engaged in industry and commerce. South of the Yangtze in Kiangsu province provided a good example.[46] Thus Article 4 of the ARL states:

> Industry and commerce shall be protected from infringement. Industrial and commercial enterprises operated by landlords and the land and other properties used by landlords directly for the operation of industrial and commercial enterprises shall not be confiscated. In confiscating feudal land and other properties, no infringement upon industry and commerce shall be permitted...[47]

In suburban China, a substantially higher proportion of landlords engaged in industrial and commercial activities. In the suburban areas of Peking, an average of over 29 per cent of the landlords belonged to this category.[48] In Shanghai, the largest metropolis and most industrialized city in China, the figure could be expected to be much higher. To ensure the least disruption of the suburban agrarian reform campaign to industrial production and commercial activities under existing management, Article 5 of the SARL stipulated that private residences of industrialists and merchants, their factory premises and warehouses, as well as their capital investments in rural villages of

suburban areas were to be exempted from confiscation. Such a policy was founded on judicious economic reasoning by virtue of the new administration's strong commitment to develop both sectors as the backbone of the nation's economy.

One of the important characteristics associated with the traditional agricultural land use outside city walls or in the urban fringe areas of China was the large acreage in market gardening. In essence, the availability of capital, close proximity to the urban market, and abundant supply of organic fertilizer and manual labour constituted the major locational factors for this particular type of farming activity. In suburban Peking, 24,200 mou (c.4,030 acres) of the total agricultural acreage of 115,800 mou (c.19,300 acres) were classified as vegetable gardens. In addition, 116,200 mou (c.19,370 acres) of crop land grew one crop of vegetables a year.[49] Large scale commercial agriculture was also evident in the suburban districts of Shanghai. In a township in the Yangshi District lying at the southern edge of the city across the Hwangpoo Kiang, the area of market gardens occupied 6,323 mou (c.1,054 acres) or 57 per cent of the total cultivated acreage of 10,326 mou (c.1,760 acres).[50] The exceedingly high population density provided abundant labour necessary for the labour intensive operation of market gardening. Despite the higher cost of production in terms of seeds, fertilizer, irrigation, and labour, the high financial returns (Table 3.3) made this particular type of agricultural activity attractive to farm operators near the city fringes where

TABLE 3.3 Net Profit for Principal Farm Products in the Eight Suburban Districts of Shanghai 1933 (yüan per mou)

Farm Product	Profit[a]	Cost of Production[a]	Net Profit
Vegetable	119.0	69.5	49.5
Rice	25.0	17.6	7.4
Cotton	21.0	15.0	6.0
Wheat	4.0	10.0	6.0 (net loss)
Soya bean	7.6	7.0	0.6

Source:

a Tables 14 and 15, Statistics of Shanghai, op.cit., pp. 36-37.

transportation cost was minimal. Surveys conducted during the experimental land reform in the city suburbs disclosed a significant characteristics of commercial suburban agriculture. Most market gardens and large orchards were operated by landlords and rich peasants who not only owned greater amounts of fertile arable land, as in the seven sample villages in suburban Peking where landlords were claimed to possess 25.5 per cent of the irrigated land and 33.2 per cent of the market gardens, but also had the capital necessary to invest in such capital-intensive farming operations.[51]

To ensure continuing operation of this particular type of agriculture in suburban areas, Article 11 of the SARL stipulated that all farm land using machinery or other modern equipment for cultivation, agricultural experiment plots, vegetable gardens and orchards in suburban areas were allowed to be managed or operated by their original owners or new owners, even if they were landlords.

This pragmatic concession to allow landlords to own

and to cultivate the above type of agricultural land was a major deviation in China's land reform policy. Two explanations for the rational approach in the suburban agrarian reform programme may be offered. Confiscation and subsequent distribution of commercial vegetable farms would certainly affect production of subsidiary foods for cities. For, unlike crop farming, vegetable production required both technical skill and relatively large amounts of capital input which the peasants did not possess, nor was the government able to provide. Further, the traditional farming techniques in rural China were antique and backward, whereas the commercial suburban agriculture represented a relatively modern type of farming operation. To the new administration, the latter provided the necessary ingredients for the future technical transformation of the agricultural sector.

Local Regulations Supplementary to the SARL

By and large, most suburban land problems were locally oriented and related to the geographical, historical, social and economical settings of individual urban centres or municipalities. In particular, many treaty ports, including some of China's largest cities, had had close contact with alien culture and western type of economic development for almost a century, and had developed some characteristics which were different from those of traditional Chinese cities. The central government found it necessary to transfer a large share of the legislative power and administrative detail of suburban land reform to the

municipal government. This approach was similar to the implementation policy of the United Kingdom's urban planning and development programme. The broad planning strategies were formulated by the central government while detailed planning was left to local authorities.[52] Thus, although the SARL was a more elaborative piece of legislation than the "Directive concerning Problems of Suburban Agricultural Land in the Old Liberated Areas", its contents were nationally oriented and embodied very broad guidelines and general principles. Aware of these shortcomings, the legislators of land reform introduced provisions in the SARL, instructing municipal authorities to prepare separate suburban land reform regulations in accordance with local conditions, and the principles laid down in the SARL. As a formality, Article 19 specified that these local agrarian reform regulations were subject to the approval of the people's government (or military and administrative commissions) of the Greater Administrative Regions or the people's government of provinces.

Accordingly, the municipal authorities of Shanghai drafted the "Regulation for Implementing Agrarian Reform in Suburban Shanghai". This local land legislation contained a number of supplementary regulations dealing specifically with land and properties owned by industrialists, merchants and individuals engaged in other economic activities, as well as special land problems in the suburban districts of the city. One of the relevant regulations in Article 8 of the Shanghai suburban land legislation stated that farmland and idle land that belonged or were entrusted to banks,

trust companies, land and property transaction companies or their agents, and those possessed by foreign residents, including individuals, enterprises, organizations, schools, missionaries and hospitals were to be confiscated. In addition, because of Shanghai's important strategic location at China's eastern frontier, another regulation in Article 8 specified that land occupied by airfields, harbours, strategic points, air defence grounds, military barracks, drilling grounds and other land for national defence were to be appropriated by the municipal authorities and distributed to the peasants. It further regulated land that had been approved and reserved for construction work relating to national defence; if a date had been already fixed for construction or expansion, the land should not be distributed for cultivation, otherwise it would be apportioned for tillage but no certificate for its use would be issued to the recipients.

As exemplified by the Shanghai suburban land legislation, the more detailed and explicit supplementary regulations drafted by local officials were designed to cope with specific land-related problems that prevailed in the suburban districts of the Chinese metropolis, facilitating achievement of the intended goal of the suburban land reform programme. This realistic approach of decentralizing both the legislative and administrative details of the suburban agrarian reform work to municipal authorities, it may be claimed, contributed to the overall success of the land reform movement in suburban China.

Delimitation of Suburban Areas for Land Reform

According to Article 2 of the SARL, the agrarian reform campaign was to be implemented in the suburban districts of major cities and major industrial centres proceeding with reconstruction.[53] The decision on designating these two main types of urban centres rested upon the people's government (or military and administrative commissions) of the Greater Administrative Regions established at the end of 1949. For North China this decision was to be made by the provincial people's government of the five provinces in the Region. In 1951, 15 large and medium sized cities in China, excluding those in northeast China, were identified: Peking, Tientsin, Shanghai, Hankow, Canton, Sian, Chungking, Changchiakuo, Taiyuan, Tsingtao, Tsinan, Foochow, Changsha, Nanking and Lanchow.[54] Most likely, this ordinal classification of the above urban centres was based on the population estimates of the municipal authorities soon after liberation. Also, land reform was to be carried out initially in the suburban areas of existing industrial cities along the coast and in Manchuria. By 1953 the programme was extended to the new industrial centres to be developed in the interior during the First Five Year Plan period.

The municipal governments of major cities and major industrial centres were instructed to establish the suburban districts for land reform - another example of decentralization of administrative power by the central authorities. A major shortcoming existed in the land

legislation. Although local conditions were suggested as the criteria to be used for delimiting these administrative areas, no explicit guidelines based on land use, social and economic characteristics were specified in the SARL upon which the geographical extent of the suburban districts could be best determined. A certain degree of inconsistency in carrying out such vague instruction could be expected. The problem was aggravated by the lack of experience of municipal officials to carry out such a task.

From a practical point of view, it is quite difficult to delineate the boundary between the built-up areas and the urban fringes, or to demarcate the outer limits of suburban districts, solely based on existing urban/rural land use associations, without considering other social and economic criteria. For, even in relatively recent time, in many Chinese cities it was not uncommon to find vegetable plots in the dominantly urban landscape, workers' villages and factories could also be found among cultivated fields in the urban fringe areas. To establish the suburban districts for land reform implementation, the municipal governments generally selected the local districts or hsiens lying contiguous to the cities. In Shanghai when the suburban land reform was initiated, the suburban territory included the ten suburban districts of Woosung, Chiangwan, Taichang, Hsinhsi, Chenyu, Hsinching, Lunghua, Yangshi, Yangching and Kaochiao. These administrative districts were originally created in 1928 by the Municipal Government of Greater Shanghai under the Kuomintang administration for the planned development of the metropolis.

Another problem relating to delimitation of suburban districts should be noted. Too often, officials or cadres of many municipal governments were anxious to launch ambitious plans to build large modern socialist cities in the near future, and they regarded the SARL as a land legislation for acquiring land for such a purpose. As a consequence, exceedingly large territories around cities were designated as suburban districts in order to ensure a sufficient reserve of land to meet the need for long term industrial construction and municipal expansion. This practice must have reached such a serious level throughout China that in May 1954 the Department of Interior issued a notification providing general guidelines to the municipal authorities to adjust or reduce the size of suburban districts already established. It emphatically stated:

> From now on expansion of suburban districts should be in accordance with the short term requirement of land for urban construction. The extent of expansion should be limited to those contiguous district which have a close relationship with the development of political, economic, cultural and international affairs of the central city.[55]

In addition, the municipalities were urged to adopt the principle of gradualism in the process of establishing suburban administrative areas in order to avoid initial excessive appropriation. The local authorities were warned that exceedingly large suburban areas would bring about administrative problems.[56]

The introduction of supplementary measures, such as this, characterized the administrative procedures of the new government. Whenever unforeseeable problems cropped up

at the regional or local level and were brought to the attention of the authorities, directives or policy statements were promptly issued by the appropriate department of the central government to rectify the situation.

Summary

The SARL, the first suburban land legislation promulgated since the founding of the PRC, was designed to transform the pre-1949 socio-economic patterns in suburban China and to utilize land resources in the vicinity of large urban centres, in order to achieve the nation's goal of industrialization and modernization. Although the land law also dealt with redistribution of agricultural land, it was essentially a land acquisition policy. It provided municipal authorities with the power to nationalize land within delimited suburban districts, either by confiscating farm land previously owned by landlords (except agricultural experiment grounds, vegetable gardens, orchards, and farm land using machinery or other modern equipment for cultivation), or by expropriating other privately owned land.

This policy of land nationalization was evidently effective in eradicating the speculative land market that often induced an artificial scarcity of land for planned urban development. To a considerable extent, it conformed with the line of thought on land ownership expressed by Dr. Sun Yat-sen in his "Min-sheng chu-yi" (Principle of Livelihood). Under the influence of the writings of Henry George, Sun strongly advocated that land was a resource endowed by

nature, and thus it should be enjoyed by all and pre-empted by none. He favoured nationalization of land for public purposes, though, contradictorily, he also advocated private ownership of land property of small size. Speculation would be discouraged by a form of capital gain tax system levied on all the profits resulting from land sales.[57]

In terms of broad objectives the suburban land policy pursued by the Chinese Communist Party was closely similar to the advance land acquisition policies developed in many western industrial nations, though the latter varied considerably in scope and method of implementation. To cope with rapid urbanization or with an intent to develop planned human settlements, municipal governments of these countries acquired land in the urban fringe areas or other sites, at some distance from the central city, lying within the metropolitan areas. The pioneering advance land purchase programme of Stockholm, the Swedish capital, offered a classic example. In 1904, with a view to resettling the lower income groups outside the congested city, the Stockholm municipal assembly began to purchase large tracts of agricultural land and woodland at Enskede Gård and Bromma, within the metropolitan limits. The continuous accumulation of relatively cheap land reserves in the ensuing years allowed the planners to carry out a master plan to develop "neighbourhood units" or "satellite settlements" - an equivalent of Britain's garden suburbs. By 1963 eighteen large suburban communities were completed, notably Vällingby and Farsta,[60] accommodating about 250,000 of the metropolitan population. This success was followed by the construction

of another five satellite settlements.[61] A number of cities in western Canada, such as Saskatoon in Saskatchewan and Red Deer in Alberta also adopted a similar approach in advance land purchase to set up a "land bank", to make land available at a relatively low cost for housing construction and orderly urban expansion. To achieve economic decentralization of large metropolitan centres, Spain acquired land in the outskirts of Madrid and Barcelona to erect "polygones" (industrial centres combined with housing development) outside the two large cities. The land acquisition programme in the Netherlands, Israel, France, the United Kingdom and Australia was motivated by the need for building planned new towns, either as growth centres in relatively less developed regions, or as a means to constrain further population increase in metropolitan centres.[62]

In some non-socialist countries, the methods used to obtain the needed land have been either by purchase, or by compulsory expropriation with compensation provided to property owners at existing market value. The success of these methods depends upon the financial resources available to the public authorities responsible for administering land acquisition. For example, the island state of Singapore has been able to implement effectively its 1966 Land Acquisition Act to expropriate land for the urban development scheme, as the relatively strong national economy enables the administration to offer very generous compensation to the dispossessed owners. Resettled farmers have been given free flats erected by the Housing and Development Board; shops compensated by the equivalent of eight years of rent at the

existing rate; and families given rental subsidies.[63] On the other hand, the land acquisition policy in Spain, according to a United Nations report, has been less successful. The municipal authorities of Madrid and Barcelona have been empowered by the Gerencia de Urbanizacion, the central land authority in Spain, to acquire land for decentralizing the economic activities and relieving the congestion of the two metropolitan centres. With limited financial backing, the public land acquisition programme has failed to stabilize land prices in the existing land market at the urban fringe. This is attributable to the fact that the land purchased has been located at some distance from the central cities where land price is considerably lower. Also, the municipalities have not been able to purchase sufficiently large parcels of land necessary for development of self-contained satellite communities.[64]

In view of the severe financial and administrative constraints of the PRC during the early days of "New Democracy", it would not be possible for the new administration to implement a land purchase programme. Through implementation of the SARL, on the other hand, the government was able to assemble expeditiously large amounts of land within delimited suburban districts without the need to siphon off part of the scarce capital needed for industrialization and to thin out the limited administrative manpower on land purchase. As it has been pointed out, all suburban cropland owned by landlords, which constituted a large proportion of suburban agricultural land, were nationalized through confiscation. This suburban land policy not only rendered land available

for the state to carry out its committed programmes of city transformation and national industrialization, but also made a significant contribution toward the long term urban planning in the PRC. By mid-1951, when the suburban land reform campaign came to an end in the outskirts of Canton, south China, the state administration was able to initiate construction of workers' housing projects outside many cities, as plenty of land was already available.

As a land acquisition policy, the SARL was successful in creating land reserves needed for future urban development. Nevertheless, some inherent weaknesses existed in the legislation. Specifically, some terminology used in the land law, such as "major cities" and "major industrial centres" in Article 2 were not defined, nor were guidelines and explicit instructions for delimiting the boundaries of suburban districts provided for implementation work.

Finally, it should be stressed, at this juncture, that land availability constitutes only one of the essential elements needed for planned urban development, for, although there was no shortage of land whatsoever for city expansion and industrial construction in suburban China, chaotic urban expansion was a widespread phenomenon. The next chapter will discuss the absence of effective legislation for land disposal as one of the key factors contributing to the sprawling urban growth and serious waste of land resources in the suburban districts of China during the First Five Year Plan period.

CHAPTER 3 - NOTES

1. Chao Kuo-chun, Land Policy of the Chinese Communist Party 1921-1953, unpublished Ph.D. dissertation, (Cornell University, 1954), p. 35.

2. Mao Tse-tung, "On Coalition Government, 29 April, 1945", Selected Works, volume 3, (Peking: Foreign Language Press, 1965), p.302.

3. Mao first introduced this concept of "New Democracy" in his essay entitled "On New Democracy", on 19 January 1940, which was later published in the third volume of his Selected Works. The idea was further elaborated in his subsequent writing of the 1940s, including "On Coalition Government", 24 April 1945; "On the People's Democratic Dictatorship", 30 June 1949; and The Chinese Revolution and the Chinese Communist Party", 15 November 1949. In essence, the "New Democracy" represents a transitional phase in the revolutionary movement of the CCP, during which the "people's democracy" takes over the "Bourgeois democratic" revolution, and lays the foundation for the ultimate phase of socialism or communism.

4. Mao, op.cit., p.303.

5. The "Huai Hai Military Campaign" was a battle of decisive importance in the Chinese Civil War, superseding both the "Liaohsi-Shenyang Campaign" and the "Peking-Tientsin Campaign". It was fought over a vast territory in Kiangsu, Shantung, Anhwei and Honan of eastern China, centering on Hsuchow and extending as far as Haichow in the east, Huai River in the south, Shangchiu in the west and Lincheng in the north. For a more detailed account of this military campaign, see Fan, K. (ed.), Mao Tse-tung and Lin Piao: Post Revolutionary Writings, (New York: Anchor Press, 1972), p.22.

6. Mao Tse-tung, "Report to the Second Plenary Session of the Seventh Central Committee of the Communist Party of China", Selected Works, volume 4, (Peking: Foreign Language Press, 1961), p. 363.

7. These two terms were first introduced in Mao's speech at the Meeting of the Chinese Communist Party's Central Committee held at the village of Hsipaiho in Hopeh, on 5 March 1949. In his speech known as "Report to the Second Plenary Session of the Seventh Central Committee Meeting of the Chinese Communist Party", Mao says: "Only when production in the cities is restored and developed, when consumer cities are transformated into producer cities, can the people's political power be consolidated". Ibid., p. 365 .

8. Chang, C.D., "Agrarian Reform in Communist China", Far Eastern Economic Review, 31 August 1950, p. 237.

9. For the full text of the "Outline Land Law of China", see Mao tse-tung, Tsen-yang fen-hsi chieh-chi (How to Analyse Classes),(Hong Kong: San-lien shu-tien, 1948).

10. Article 9 of the "Outline Land Law of China" stipulates the methods for dealing with "special lands" and properties:

    A. Woods and hills, irrigation works and waterworks, roads, orchards, ponds, wasteland and other distributable land shall be divided up on the basis of ordinary arable land.

    B. Large forests, large hydraulic engineering works, large mines, large pastures, expansive wastelands and lakes shall be administered by the government.

    C. Sites of scenic attraction and historical interest shall be properly protected. Confiscated special libraries, antiques, works of art, and so forth, which possess historic or academic value, shall be registered and handed over to the higher authorities of the locality.

    D. Fire arms and ammunition, and those large quantities of money, valuables and grain left over after satisfying the needs of the peasants, shall be handed over to the higher authorities of the locality.

11. Ch'i Chi-san, "The Basic Principles of Suburban Land Reform", Ching-chi chou-pao (Economic Weekly), vol.11, no.23, June 1950, p. 10.

12. The terms "Old Liberated Areas" and "New Liberated Areas" were introduced when China was divided into six Greater Administrative Regions in December 1949. The former included the North China G.A.R., the Northeast G.A.R., whereas the latter the Northwest G.A.R., the Southwest G.A.R., the Central-south G.A.R., and the East China G.A.R.

    Source: "Regulations for the Organization of the People's Government Councils in the Greater Administrative Areas," Jen-min nien-chien (People's Yearbook), 1950, (Shanghai: People's Publishing House, 1950), pp. 51-54.

13. Hsin-hua yüeh-pao (New China Monthly), vol.1, no.5, March 1950, p. 1215; hereafter: HHYP.

14. Peking Municipal People's Government, Peh-ch'ing chiao-ch'ü tu-kai pao-kao (Report of Land Reform in the Suburban Districts of Peking),(Peking: Hsin-hua shu-tien, 1950), p.7.

15. For the detailed content of the SARL, see Appendix A.

16. The ARL was finally promulgated by the Government Administrative Council (GAC) on 28 June 1950, after three decades of experimentation and rectification. As stated in Article 35, the Law was applicable only to rural areas, but not to the areas in the vicinity of large cities or to areas inhabited predominantly by national minorities.

    A detailed economic analysis of the ARL was presented by John Wong in his book entitled: Land Reform in the People's Republic of China - Institutional Transformation in Agriculture, (New York: Praeger Publishers, 1973), particularly pages 74 to 86.

17. HHYP, op.cit., p. 1215.

18. It is worth noting that the general method employed by communist regimes to gain control over land resources was to nationalize all land confiscated or requisitioned during the land reform programme. In the radical land policy of Soviet Russia, all land (including estate properties, and land that belonged to individual peasants and peasant committees) was converted to state ownership at the initial stage of the Bolshevik land reform, under the provision of the Statutory Law concerning Land of 19 February 1918. See Chou Ya-lun, "Chinese Agrarian Reform and Bolshevik Land Policy", Pacific Affairs, 1952, p.29. On the contrary, the Chinese did not choose to adopt such land policy in their agrarian reform programme, nationalization of land was limited to mainly non-arable land. See Article 30 of the Agrarian Reform Law.

19. This term was first introduced at the time of the experimental land reform in suburban Peking. The entire suburban area of the capital included 7 districts, consisting of 6 towns, 10 hamlets and 264 villages. To facilitate agrarian reform administrative work, the suburban area was subdivided into "chin-chiao" (near suburb) and "yüan-chiao" (far suburb). See Report of Land Reform in the Suburban Districts of Peking, op.cit., p.7.

20. Ibid., p.7.

21. Nan-fang jih-pao (Southern Daily), Canton, 10 April 1951; hereafter: NFJP .

22. Cheng-fu kung-tso pao-kao hui-pien 1950 (Compendium of Reports on Government Work 1950),(Peking: Jen-min ch'u pan-she, 1951), p. 620.

23. HHYP, vol. 3, no.3, 1950, p. 540.

24. Ch'i chi-san, op.cit., p.9.

25. Shang-hai chieh-fang i-nien (One Year after Shanghai's Liberation),(Shanghai: Jen-min ch'u-pan-she, 1951), p.81. For more information on pre-1949 Shanghai suburban

agriculture, see Shang-hai ch'i-i jen-min kung-she shih (History of the First of July Commune in Shanghai), (Shanghai: Jen-min ch'u-pan-she, 1974); especially pages 1-8, 182-183.

26. Statistics of Shanghai 1933, (Shanghai: The Shanghai Civic Association, 1933), p.8. (Text in Chinese and English).

27. These figures were calculated from data in NFJP, 10 April 1951, op.cit., and Report on Land Reform in the Suburban Districts of Peking, op.cit., p.7, respectively.

28. Compendium of Reports on Government Work 1950, op.cit., p. 622.

29. Shang-hai chieh-fang i-nien, op.cit., p.19.

30. Bureau of Foreign Trade, Ministry of Industry, China Industrial Handbook: Kiangsu, (Shanghai: The Commercial Press, 1933), p.31.

31. Buck, J.L., et al., Land Utilization of China, (Chicago: University of Chicago, 1937), p. 196.

32. Tawney, R.H., Land and Labour in China, (London: George Allen and Unwin, 1932), p.68.

33. Ibid., p.68.

34. Statistics of Shanghai, op.cit., p.23.

35. Buck, op.cit., p. 178.

36. Article 30, Agrarian Reform Law, see HHYP, vol.3, no.3, 1950, p.539.

Note: There were some exceptions. Certain types of "special lands", which were mainly non-arable land, as specified in Section 4 of the ARL, were placed under state ownership, including all large forests, large water conservancy works, large expanses of wasteland, large uncultivated hillsides, big salt flats and mines, as well as lakes, marshes, rivers and ports. (Article 18) Crop farms, seedling nurseries and experimental farms that were cultivated with modern farm equipment and large bamboo groves, large orchards, large tea groves, large tung-oil plantations, large mulberry fields, large pastures, if owned by landlords, were to be nationalized. (Article 19).

37. For the criteria for differentiating classes in rural China; landlords, rich peasants, middle peasants (including well-to-do middle peasants), poor peasants and landless labourers. See An Ping-sheng, Ju-hao chih-tao hua-fen chieh-chi ti tao-cheng (Do Well the work to direct the struggle for Class Differentiation),(Canton:

Nan-hua ch'u-pan-she, 1951), pp.6-7.

38. Kan-su jih-pao (Kansu Daily), Lanchow, 21 November 1951.

Note: This policy might have been partially responsible for the rapid urban population increase in the 1950s. It also violated the marxist philosophical tenet of reducing the differences between factory workers and peasants.

39. HHYP, vol.3, no.3, 1950, op.cit., p.540.

40. Sun Wen, Sun Chung-shan hsüan-chi (Selections from the Writing, Letters, etc. of Sun Yat-sen),(Peking: Jen-min ch'u-pan-she, 1956), 2 volumes, (volume 1), p.207.

41. Article 13, Suburban Agrarian Reform Law, see HHYP, 1950, op.cit., p.538.

42. Hua-tung-ch'ü t'sai-cheng ching-chi fa-kuei hui-pien (Compendium of Regulations of Economic and Finance for the East China Region),(Shanghai: Hua-tung Jen-min ch'u pan-she 1951), p. 2009.

43. HWJP, 11 April, 1951.

44. Chung-hua jen-min kung-ho-kuo fa-kuei lun-pien 1956 (Compendium of Regulations and Ordinances of the People's Republic of China, 1956), (Peking: Fa-lü ch'u-pan-she, 1956), p.351.

45. Mao Tse-tung, "On the Policy Concerning Industry and Commerce", 27 February 1948, Selected Works, vol.4, (Peking: Foreign Language Press, 1961), p.203.

46. Soo-nan jih-pao (Southern Kiangsu Daily), Wusih, 28 November 1950.

47. Chang, C.D., op.cit., p. 238.

48. Peh-ch'ing chiao-ch'ü tu-kai pao-kao, op.cit., p.8.

49. Ibid., p.8.

50. Shang-hai chieh-fang i-nien, op.cit., p.81.

51. HHYP, vol.3, no.3, 1950, op.cit., p. 539.

52. Town and Country Planning in Britain, (London: Central Office of Information, 1968), (Prepared for British Information Service, Canada), pp.3-4.

53. These referred to existing industrial cities in Manchuria and along the coast.

54. HHYP, vol.3, no.5, p. 1065.

Note: Criteria for demarcating urban and rural

areas were first introduced by a resolution passed at the 20th meeting of the State Council on 20 November 1955. See T'ung-chi kung-tso t'ung-hsun (Statistical Work Bulletin), no.12, 17 December 1955, p.4.

55. Hsi Yu-yuan, "Chung-hua jen-min kung-ho-kuo hsing-cheng ch'ü-hua ti hua-fen" (Demarcation of Administrative Districts in the People's Republic of China), Acta Geographica Sinica, vol.10, 1950, p.487.

56. Ibid., p.488.

57. Sun Wen, op.cit., p.312.

60. For the detailed planned layouts and the development process of these two well known satellite communities of Stockholm, see Pass, D., Vallingby and Farsta - from Idea to Reality: The Suburban Development Process in A Large Swedish City, (Massachusetts: MIT Press, 1973).

61. Sidenbladh, G., "Stockholm: A Planned City". In Scientific American, (Special Issue: Cities), vol.213, no.3, September 1965, p. 114.

62. Darin-drabkin, H., Land Policy and Urban Growth, (Oxford: Pergamon Press, 1977), p. 278.

63. Yeung Yue-man, National Development Policy and Urban Transformation in Singapore: A Study of Public Housing and the Marketing System, The University of Chicago, Department of Geography, Research Paper No.149, (Illinois, Chicago: the Department of Geography, 1973), p.41.

64. United Nations, Urban Land Policies and Land Control Measures, vol.3: Western Europe, (New York: 1973), p.304.

CHAPTER 4

LAND SQUANDERING AND URBAN SPRAWL

Introduction

Urban sprawl has been a common problem in many industrial and non-industrial countries. This phenomenon is generally understood by urban geographers and urban planners as spatial expansion of urban settlements in a disorderly and haphazard manner.[1] Harvey and Clark identified at least three major types of sprawl: low density sprawl with continuous developments containing extravagantly large lots; ribbon development characterized by segments compact within themselves, strung along highways, with the intervening areas undeveloped; and leap-frog development of discontinuous but compact urban nuclei.[2] In most economically advanced nations the confusing spatial growth patterns of cities have been attributed to individual freedom to own land and use land as a commodity, and to speculate in land for lucrative financial gain. Other causes include premature land subdivision for residential purposes by developers, and the lack of co-ordination in planning for the development of the urban fringe areas between city governments and suburban authorities. On the other hand, planning for large metropolises in many developing countries has followed the European and North American examples. As few conceptual approaches appropriate to local conditions have been adopted, coupled with the absence of urban land policies and urban land reform, chaotic expansion is still

much in evidence in the Asian metropolitan cities of Calcutta, Manila, Jakarta, Karachi and Tehran.

In the People's Republic of China, after the promulgation of the Suburban Agrarian Reform Law (SARL) in November 1950 an important foundation for urban reconstruction and development was laid when private ownership of suburban land was replaced by state ownership. This legislation eradicated permanently all land speculations and land transactions.[3]

Nevertheless, urban sprawl reached serious proportions in China during most of the 1950s when many cities underwent vigorous development. Two major factors contributing to China's disorderly urban spread may be identified. These include legislative weaknesses relating to administration of land allocation for municipal and industrial construction, and indiscriminate emulation of Soviet model of urban planning and building by Chinese city planners.

In this chapter the legislative and administrative shortcomings in land expropriation leading to China's urban sprawl during the First Five Year Plan period will be reviewed. This analysis necessarily will be placed within a national context, because, as will be shown, although there was a regional variation in the seriousness of the situation, the problems were widespread in urban China during this period of rapid industrial and urban development.

Legislative Weaknesses in Land Expropriation

Even before large scale industrial construction in

the key-point cities, erection of workers' villages or housing projects had already begun in the suburban areas of many Chinese cities. At that time, the SARL was the only existing legislative measure which dealt with the disposal of suburban land. There were no specific regulations embodied in the Law concerning administrative control of land expropriation. In the absence of such essential legislation the problems of illicit land requisition and wasteful use of valuable land resources by state enterprises emerged in the People's Republic. The evidence of improper use of expropriated land appeared as early as August of 1951. A letter in the reader's column of Nan-fang jih-pao (Southern Daily) in Canton complained about the premature expropriation of over 100 mou (over 16.7 acres) of productive farm land at the fringe area of the city by the State Sugar Refinery. It was disclosed that the land expropriated in January of that year was still lying idle eight months later.[4]

The first legislation concerning land to be used for state industrial and municipal construction was belatedly introduced by the Government Administrative Council (GAC) on 5 November, 1953, three years after the SARL came into effect. The basic framework of the regulation consisted of twenty-two articles comprising the general principles, the administration of land requisition, and the methods of compensation for the peasants whose land has been expropriated (see Appendix B).

These regulations have a number of weaknesses which eventually precipitated many crucial problems associated with excessive land requisition by state enterprises and

municipal planning authorities. First of all, the basic principles specified that land expropriation should be made in accordance with the actual need of state construction. Construction units were urged to give first consideration to using waste land or land not suitable for agricultural purposes, and no farmland should be used unless it was absolutely necessary. It also specified that compensation should be given to the peasants for all land expropriated. To say the least, these fundamental elements of the Regulations provided only broad guidelines to land expropriation, and they seemed to be simply reasoned appeals. There were no additional prescribed directions to ensure their implementation. Furthermore, there were other shortcomings existing in the administration of the Regulations. Unlike the SARL, implementation of land expropriation for state construction was only partially decentralized, though it was the policy decision of high level of authorities in the national context. The central government delegated the administrative power to lower levels of government to grant approval for the use of land for construction of a local nature, whereas land to be used for construction of a national nature was to be determined by the National Planning Committee of the central government, and approved by the GAC (Article 4, Section 2). Inevitably, the enormous size of the country, the large number of state construction projects to be undertaken during this period of rapid development, and the heavy administrative burden of the central governing body would make close scrutiny of land acquisition an unattainable task. Further, there was no liaison between departments responsible for the approval of

construction plans and the various levels of government administering the land legislation.

A second law concerning use of suburban land came into effect on 24 February 1954, a supplement to the 1953 suburban land regulations. The decree removed the nominal utilization fees and rent for using suburban land by state enterprises, government departments, educational institutions and military units. As guidelines for land expropriation the municipal government was urged to adhere strictly to the principles of planned and rational utilization of land, and the construction units to acquire the amount of land according to their actual needs and the current status of development. To impose a deterrent to acquiring land illegally and excessively, the municipal government was instructed to charge fees and rent (the same form of payments which was removed by the legislation) for the land occupied, but which had not been approved, or on the portion of land that exceeded the amount approved by the GAC, and the People's Committees of the provincial and the county levels.[5]

The only merit of this law was the removal of nominal utilization fees and rent for land to be used by state enterprises for construction purposes, for it eliminated the onerous office procedure involved in land expropriation. After all the receipt of such payments would not even increase marginally the state revenue. On the other hand, had the central authorities elected to increase the amount of fees or rental payments, it would merely enlarge the state budget and complicate the administrative work on land acquisition. As regards the curtailment of illicit and excessive land

expropriation, this legislation was evidently self-defeating, since the payments, no matter how large or small, were subsequently provided by the state. This policy decision, therefore, actually encouraged improper land acquisition. Further, as with the preceding land legislation, the guidelines which it provided were very vague. Because of all these shortcomings, this ordinance eventually exacerbated the widespread problems of excessive land requisitioning in China.

The experiences in land allocation work of Loyang's Municipal People's Committee provided a case in point. During the First Five Year Plan period the municipal authorities allocated land to construction units, without investigating the document of approval for construction issued by the senior department of these units. Consequently, it became a normal practice for state enterprises to acquire land before application for construction was approved. To aggravate the problem of wasteful use of land resources, whenever there was a cancellation of a construction project, or a change of plan, the expropriated land was still retained by the units and allowed to remain idle. Furthermore, construction units often asked for more land than they actually needed, and subsequently a large amount of land was unnecessarily requisitioned for future development. For example, the Loyang Furniture Factory requested 320 mou (c.53 acres) of land for building the factory premises. The official of the Municipal People's Committee responsible for land allocation believed that 150 mou (25 acres) would be quite sufficient for the project. However, since there was

neither an approved construction plan nor an official specification providing a guide for the amount of land to be allotted, 249 mou (c.42 acres) of land was subsequently approved.[6] The Loyang Brick and Tile Factory furnished another example illustrating the defects in land legislation. The state enterprise requested 300 mou (50 acres) of land for construction, but, again, no guideline for the amount of land to be granted was available. In this case, the request was approved only because the building permit had been issued by the Department of Industry and the Bureau of Industry at the provincial level. It was later discovered that construction of the factory needed no more than 180 mou (30 acres) of the expropriated land. The portion of land not used for the building projects at both sites was left idle. Such waste of land resources caused reduction of agricultural production and widespread dissent among the peasants who surrendered the land. It was further made known that within the period 1954-1956, the Municipal People's Committee of Loyang allocated 19,500 mou (over 5 square miles) of land in the city's suburban areas for construction purposes. There was an alarming amount of illicit land expropriation: more than 80 per cent of the construction units in the city acquired land without official permission.[7]

Although the municipal authorities were empowered to exercise administrative control over disposal of suburban land for state and municipal construction projects, the examples revealed above provide evidence of the ineffectiveness of the land legislation issued by the central

authorities, and the frustration and helplessness of the officials responsible for this particular kind of administrative work.

Apart from administrative difficulties in allotting land for state and municipal construction due to shortcomings in land requisition laws, suburban agricultural land disappeared as a result of unnecessary building of factories and workshops:

> Some leading cadres at state enterprises preferred 'bigness' to 'small'. (They) disliked the existing old workshops, and expected to build large new ones within a short period of time. Because of poor administration in some factories, a 'false' shortage of workshop space appeared. Some cadres failed to improve energetically their administrative work, but blindly expanded workshop space... Still there were some cadres who blindly acquired industrial equipment. Because existing (workshop) space was insufficient for accommodating all the new equipment, more workshops had to be built.[8]

By 1956 many incidences of improper land expropriation and land squandering were brought to the attention of the State Council. It subsequently issued a notification with supplementary regulations for the preceding land laws. This official document cited selected statistics on excessive land expropriation that occurred in five cities and one province, and it also included a summary of the major causes of land squandering. According to selected samples collected in the cities of Wuhan, Changsha, Peking, Hangchow and Ch'engtu, and the province of Hopeh, over 101,000 mou (over 24 square miles) of land was expropriated for construction in the last few years. Over 41,000 mou (over 10 square miles) or over 38 per cent of this land was left unused. Among these surveyed samples the most serious

land squandering occurred in the city of Changsha in Hunan province. From 1949 to the end of 1954, over 40 per cent of the 20,000 mou (c.3,300 acres) of the requisitioned land lay in waste.[9] Certainly, such a small sample did not provide a complete picture of the entire situation. However, it might have been purposely selected by the central administration to demonstrate the seriousness of the problems concerning the misuse of suburban land.

It has been previously argued that the weaknesses in the land expropriation law should at least be partially responsible for the widespread occurrence of wasteful use of land resources, but the central authorities seemed to place the blame entirely on the lower levels of government and the construction units. Five major reasons for the irregularities were listed: first, many construction units failed to prepare their land use and construction plans properly, and acquired excessive amounts of land for long term development. Secondly, some state enterprises did not consider their actual needs for land at various phases of development, and expropriated land prematurely. Thirdly, the distribution of buildings within factory compounds was widely dispersed and thus wasted large amounts of land. Fourthly, some state industries expropriated land without obtaining official approval, and acquired land from the peasants by intimidation and coercion; and finally, the system of control over land expropriation was not properly administrated by officials at various levels of government. Frequently, the location and the amount of land to be acquired were arbitrarily determined by the construction

units. Sometimes approvals for use of land were granted by various levels of administration prior to the submission of the land use plans and the blue prints of construction. Furthermore, administrative officials did not investigate the subsequent use of land as originally proposed in the applications submitted by the construction units. Thus, very often, the practice of land squandering could not be prevented in time.[10]

As a fresh attempt to curtail excessive land expropriation several regulations were introduced in the notification. People's Committees of various administrative levels were instructed to determine the amount of land needed for municipal or industrial construction according to the urban plan or the construction plan for factories respectively. Approval for use of land should not be granted unless all regulations were observed strictly by the construction units. For the first time, an inspection system was adopted. Primarily, it aimed at reducing the practice of improper land requisition, and returning all excessively expropriated land to agricultural production. Under the system, supervisory officials of construction units were required to scrutinize all plans of land requisition.[11]

Despite these fresh attempts at improving the administrative control over the use of land for state construction, land squandering and premature land acquisition were still frequently reported in Chinese newspapers, both national and municipal, as well as official journals published in 1957 and early 1958. In mid-1957, the Shensi Daily disclosed that various construction units in Sian, a rapidly

growing industrial centre in the interior, acquired a total amount of 83,000 mou (c.14,000 acres) of land in the near suburb and three districts on the outskirts of the city. According to a sample survey taken in the near suburb, only 42,000 mou (7,000 acres) of the 53,000 mou (c. 9,000 acres) of the expropriated land was actually used for construction, which meant that over 20 per cent of the land was acquired excessively or prematurely. The article further pointed out that some of this land lay idle for as long as six years.[12] Random official investigation conducted in the province of Szechwan revealed the practice of improper land acquisition. Among the 4,486 mou (c.748 acres) of land acquired by 14 construction units, 37 per cent was left idle and as high as 46 per cent illicitly expropriated. In Ch'engtu, an emerging industrial city, over 5,900 mou (c.983 acres) of land assigned for railway construction was never put into any use. In Lanchow, a key-point city in Kansu province, 37 industrial enterprises took more than was actually needed by as much as 15,000 mou (almost 4 square miles), most of which was left unused for four years.[13] Peking, the national capital, claimed a large share of industrial and municipal construction among the key-point cities. The majority of the new building projects was erected outside the city walls. From 1949 to mid-1957, the total amount of land in suburban Peking assigned for constructing factories, educational and research institutes, government offices, workers' housing projects and public parks reached 210,000 mou (54.6 square miles). About 15,000 mou (c. 4 square miles) of all these

expropriated land was considered as agriculturally unproductive. In other words, about 195,000 mou (c. 50 square miles) of the suburban farmland in the capital was encroached upon by building projects.[14]

The epidemics of excessive land requisition on a large scale spread to coastal industrial cities after the central government adopted the policy to utilize fully existing industrial facilities in old industrial cities. In 1956 the amount of suburban land in Canton expropriated for construction purposes surpassed that in any one year since liberation. The amount of land acquired by 201 construction units from 1 March to 25 July reached 10 square kilometres, an equivalent of almost one-quarter of the city's built-up area.[15] In mid-1957 the Municipal Construction Committee of Canton disclosed that many state enterprises 'blindly' requisitioned land in the suburban areas, leading to widespread loss of vegetable gardens. Some units expropriated land before their construction plans were approved. In some cases, even after the original plans were changed or cancelled, the units still retained the land and allowed it to be left idle. The Number 433 Factory took 74 mou (c.12.3 acres) of land out of production.[16] Also in 1957, the Department of Higher Education in Shanghai investigated the amount of land acquired by Chiao-tung University, the Architectural Engineering Institute and seven other educational institutions. It was discovered that the area requisitioned was nearly twice that specified and approved by the Department. It was further pointed out that the amount of land lost reached as much as 1,800 mou

(c.300 acres), or nearly 40 per cent of the land expropriated, due to irrational and careless planning.[17] As viewed from the above examples, the direct relationship between the amount of land wasted and the scale of industrial development was a normal phenomenon in the People's Republic during the First Five Year Plan period.

Several explanations may be offered for the failure of the supplementary regulations, including the inspection system. It was suggested to the local authorities responsible for land administration that urban plans should be used as guides for determining the amount of land to be allocated to construction units. However, these plans were simply non-existent in many cities even by 1956, as data required for drawing up city plans was still being collected at that time. (This problem will be discussed in detail in the next chapter on urban planning.) The accumulation of urban data and preparation of land use plans for the key-point cities were extremely complicated, and they required a long period of time to accomplish. In fact this was one of the reasons why the Chinese later favoured the building of small cities (see Chapter 8).

The directive to use approved construction plans for factories and housing projects as a basis for land allocation to construction units was equally unworkable. Numerous construction projects had already been started or were even well underway before the approval of the construction plans by the local authorities concerned. According to the 1956 year end statistics of the Bureau of Urban Construction of the province of Shensi, there were

more than 260,000 square metres of illegal construction in the city of Sian alone.[18] It became evident, therefore, that the general failure in the enforcement of municipal construction ordinances in many cities contributed to the ineffective implementation of the revised regulations.

Further, an important loophole to the inspection system should be noted. It was well known that the Soviet advisers and experts, while providing the Chinese with technical assistance in industrial development during the 1950s, enjoyed many special privileges: much better accommodation and higher wages than their Chinese counterparts. Because of China's lean-to-one-side policy, special exemption from the inspection system was granted to construction units which acquired land for building Soviet designed industrial projects. Such discriminatory application of the inspection system was not frequently reported, because the Chinese did not want to offend the Soviet experts. When the incidents which occurred in Loyang were cited in an article in an architectural journal, the Russians were not mentioned directly.[19] There is every reason to believe that the same exemption was granted in key-point cities where the Russians participated in planning, design and construction of major industrial projects.

Mainly because of these factors, the inspection system introduced in 1956 achieved very limited success, at least near the end of the First Five Year Plan period, in improving the administrative control over use of suburban land. However, it should be noted that the system brought to light other forms of land squandering

which had not been noticed by the State Council earlier.

Other Forms of Land Squandering by State Construction Projects

First of all, a low building coefficient[20] was found to be common in all state enterprises. As reported in the People's Daily, buildings in many state construction projects generally occupied only 20 per cent of the land within the compound, and those in some even took up an astoundingly low 4.6 per cent.[21] Early in 1952, the Soviet Union assisted in the planning and construction of the integrated iron and steel complex in Anshan. Without including the production area, the site for erecting several 100,000 square metre three-storeyed workers' living quarters occupied a total area of over 300,000 square metres (c.74 acres). Proportionately, the buildings took up only 13 per cent of the entire site, whereas roads and green areas 17 per cent and 70 per cent respectively. At another site of 630,000 square metres (c.155.4 acres) for the 100,000 square metre single-storeyed housing project, the buildings occupied a slightly higher proportion of under 20 per cent, while roads 31 per cent and green areas 49 per cent of the total area.[22] According to an investigation conducted by the Municipal Bureau of Construction in Peking, a small sample of 33 construction units including factories, post-secondary education institutes and "construction for civilian use" expropriated 100,800 mou of land (c.16,800 acres). The building

premises of 11 construction projects occupied less than 10 per cent of the land acquired, while those of 12 units took up less than 15 per cent, and those of 5 units less than 20 per cent. It was claimed that 40,000 to 50,000 mou (c.6,700 to 8,200 acres) of land would have been saved and used for agricultural production if the building density of new construction in the capital was to increase to a mere 25 per cent.[23] In 1957 the Shanghai Municipal Bureau of Inspection was established. It functioned jointly with the Municipal Bureau of Planning and the Municipal Bureau of Land and Housing to investigate land squandering in the metropolis. Among the 44 construction projects inspected, 20 wasted over half of the land acquired. On average, the building coefficient of these building developments amounted to less than 50 per cent.[24]

State construction units generally retained large amounts of suburban land for future development. The amount of land reserved often exceeded that for construction need by several times. Acquisition of extra land for future expansion and for building large sports stadiums was a common practice among educational institutes. Several examples were cited in an editorial of the People's Daily:

> A university at Sian has an enrollment of about three thousand at present, and it planned to expand its facilities to accommodate twelve thousand. To achieve this planned expansion, the institute obtained more than 90 hectares of land... Six secondary technical schools of the Railway Department in Chengtu were built within a designated site, but each school wanted to build its own large sports stadium with soccer field and race tracks. Finally, all the institutes

> for higher education within the "cultural-educational district" of Peking's western suburb, being at close proximity to one another, could have shared the public athletic and sports facilities that were to be built within the district. However, each institute preferred to look after its own affairs.[25]

Another form of extravagant use of land in the suburban areas of Chinese cities was the adoption by state enterprises of Soviet industrial regulations stipulating the establishment of "special segregation belts" to separate individual factories, industrial zones and residential zones at a specific distance apart. The main functions of these belts was to promote "environmental hygiene", and served as a means of "air defence" for industrial plants. For the purpose of reducing the damaging effects of industrial pollution, factories generally designated about one-fifth of the acquired land for use as "green areas".[26] According to the specification of the regulations, the width of these belts segregating industrial areas and residential areas for hygienic purpose generally ranged from 50 metres to 1,000 metres. However, it would be doubled if the industry was located upwind so that the dust and smoke would not reach the inhabited areas.[27] There were examples exceeding the specified standards. In Sian, the "green areas" of three factories of the Second Machinery Industry Department occupied over 2,000 mou (c.330 acres) of land.[28] Some factories reserved over 50 per cent of their land for such use.[29]

For security reason, factories manufacturing goods for national defence or military use established a "security

belt" around their compound. The specially prepared surface of this strip of no-man's land was generally covered with loosened soil particles so that footprints of intruders might be detected. According to Soviet specifications the width of this belt was either 300 metres or 600 metres, depending on the degree of security necessary. The inspection system revealed the commonplace practice of establishing such belts by state industrial enterprises. Many factories producing goods not for military use also set up a security belt around their perimeters.[30] Other reports also substantiated the fact that some state enterprises used more land for security purposes than for factory premises. For example, the area allotted to the factory site of a certain military chemical works was one square kilometre, whereas that of the factory's "security belt" exceeded five square kilometres.[31]

Industrial estates are sites used mainly for manufacturing activities. However, as the above examples illustrate, industrial land in China included that designated for both industrial and non-industrial purposes. The latter, consisting of green areas, security zones and segregation belts for environmental protection, actually took up a significant proportion of the industrial land. In Paoting, according to the city's short term plan, 841.45 hectares were designated for industrial use; 702.8 hectares of which were to be used for large industrial projects. In reality, only 292 hectares would have been sufficient.[32] This indicated that a substantial amount of the so-called industrial land would be used for non-industrial purposes.

Table 4.1 shows the land use components for four selected factories in Paoting, indicating an astoundingly high percentage of land assigned to non-industrial uses.

TABLE 4.1 Land Use Components for Selected Factories in Paoting, 1957. (in acres)

Types of factory	Total Area Occupied	Land for Factories[a]	Building Coefficient(%)[a]	Land in Unspecified Use
A	210.5	150.0	33.0	99.3
B	135.0	112.5	6.6	103.8
C	87.5	70.0	14.2	59.4
D	607.5	225.0	44.4	123.6

	Living and Dwelling Space[a]	Building Coefficient(%)[a]	Land in Unspecified Use
A	60.5	41.0	35.7
B	22.5	22.0	17.6
C	17.5	28.5	12.4
D	382.5	26.1	182.7

	Total Land in Unspecified Use[#]	Per Cent
A	135.0	64.1
B	121.4	89.9
C	71.8	82.1
D	406.3	66.8

Key for types of factory:
A Artificial Fibre Factory
B Thermal Power Station
C Paper Mill
D Textile Factory

a Chou Hsu-yü, "Some Suggestions on the Preliminary Plan of Paoting", Ch'eng-shih chien-she (Urban Construction), no.8, 1957, p.19.

Note: In China this category of land use was designated for the following purposes: large squares at the entrance of factory compounds, wide central boulevards, courtyards, green areas, security belts, segregation areas for hygienic purposes. Anon. (Peking Institute of Design for Industrial Architecture), "Some Experience in Site Planning for Medium and Small-sized Factories", Chien-chu hsüeh-pao (Journal of Architecture), no.2, 1958, p.6.

Besides the low building density within the compound of state industrial enterprises, many factories were designed and built as individual self-contained units. In many cases, industrial plants selected their sites too far from the city and the workers were not able to use the public amenities already available. As a result, industrial enterprises acquired large amounts of land for the construction of clinics, shops, day-care nurseries, theatres, assembly halls and other public amenities for their workers. Even when some factories were located less than 2 kilometres from major urban centres, a wide range of welfare amenities were provided for the workers, as no consideration was given to using the existing facilities in the cities. Because of this unnecessary construction, for example, a fertilizer plant, a thermal power station and a paper mill at Luchow, a small industrial city in Kwangsi Chuang Autonomous Region in southwest China, occupied a total area of 30,000 mou (nearly 8 square miles) of land.[33] This is certainly an instance of extremely lavish use of land by any standard, as such a large area taken by three industrial plants can normally accommodate a city of moderate size.

In addition, the generous and fairly comprehensive state welfare system of providing industrial workers and their families with living accommodation aggravated the problem of excessive land requisition by industrial enterprises. Construction of large number of workers' living premises had already been initiated in many cities before the beginning of the First Five Year Plan period. Many factories charged their workers only nominal rent and

utilities fees for these living premises, and in some cases, these services were provided free of charge. Consequently, this led to widespread abuse of the welfare system. An ever increasing number of workers' families and even distant relatives moved into dormitories of factories from their former dwellings in the city or from the rural areas. In a factory in Nanking, because of the exceedingly low rent for the accommodation provided by the factory, 108 workers' families out of 199 moved out from their former dwellings in the city and rented them to others.[34] The "ta-tze-pao" (big character wall poster) which appeared in the steel plant at Shihchingshan criticized the factory's workers who rented out their own house and moved into the workers' dormitories of the factory. There was a substantial rent differential per annum between houses in the city and workers' residences: the former being 262 yüan and the latter only 194 yüan. It was estimated that over 100 workers made the move.[35] This welfare system attracted many of the workers' dependents to migrate into the cities from rural areas, as the workers felt that it would be more advantageous to bring their families into the city to live with them in factory accommodation than to send monthly remittances to support them in the village.[36] Of course, this factor contributed to the rapid increase of urban population, and at the same time, exerted great pressure on the existing demand for workers' living quarters.

As part of the incentive measures to encourage skilled workers to migrate and settle in the new industrial cities in the interior, the central government provided

them and their dependents with very generous welfare benefits which included not only free living quarters, but also travel allowances, living allowances, and other subsidies. Because of this policy the proportion of workers with families in most of the new industrial centres in China's interior reached as high as 65 per cent.[37] Although a new regulation was later introduced by the central government to reduce the proportion of workers with families to be accommodated in workers' dwellings of all new industrial concerns to below 50 per cent of their payroll,[38] the enforcement of the regulation was often unsuccessful. As evidence suggested, 60 per cent of the workers in Lanchow had families living within factory compounds, and in Sian 70,000 workers brought 60,000 relatives with them and were housed in workers' dwellings.[39] Owing to the need to provide shelter for such a large percentage of workers and their dependents, it is therefore not surprising to find reports on the disproportionate use of land between factory premises and workers' housing. Within the compound of the Chengchow Textile Machinery Factory, workers' accommodation already occupied 23.43 per cent more than premises used for production purpose. However, the factory administration still planned to build more living quarters for married workers in 1957.[40] Also, in a cement plant at Hsit'sun, a "near suburb" of Canton, all its 380 workers were housed in the factory residences. Of these workers 165 had families living with them. The area occupied by workers' dwelling already surpassed that taken up by factory building by 25 per cent. If the rest of the workers

were to bring their dependents to live with them, the workers' housing would have to be expanded by at least 6,000 square metres.[41] This estimate of residential space use is rather conservative; it is based on an average of five persons plus one worker per family, and the dwelling space provided is less than five square metres per persons, whereas the standard for dwelling space per capita adopted in key-point cities at that time was nine square metres.[42]

The Chinese authorities must have been so deeply concerned with improper land expropriation and wasteful use of land resources that Li Fu-ch'unand Po I-po, vice premiers of the State Council, inspected urban and industrial construction work in the cities of Sian, Ch'engtu and Chungking in interior China in May 1957. After the inspection tour, a number of problems relating to land squandering were brought up for discussion by Li Fu-ch'un at the meeting of cadres in Chungking later the same month. He pointed out that in those cities he visited, many state enterprises, educational institutions and government departments acquired an excessive amount of land. Some units requisitioned land which they did not need. A fertilizer plant of the Department of Chemical Industry was cited as an example. It expropriated 207 hectares for construction purpose, and 147 hectares for future development. The building coefficient within the factory compound was only 19.8 per cent. After further investigation it was found that to construct a fertilizer plant of similar size, if the original plan was revised, and the unnecessary reserved land deleted, only 50

hectares, instead of 207 hectares, of land would have been sufficient. At the conclusion of the meeting, the vice-premier made a number of recommendations. He suggested that all cadres responsible for construction projects should use land economically. They should not undertake large-scale construction projects for the sake of putting up "grand shows". Factories should not be allowed to requisition land or to reserve land for future development unless approved by the state. The standard for use of land for construction should be appropriately rectified and the building coefficient raised. It was finally hoped that the People's Committee of various administrative levels would strictly control the allocation of land. They should, whenever possible, allocate vacant land among existing buildings to construction units which needed land urgently.[43] The inspection tour of the vice-premiers indicated the persistence of improper use of suburban land despite recent revision of the land legislation. In this analysis it has already been argued that it was the unrealistic guidelines of the regulations and their vague instructions that contributed to excessive land expropriation and taking agricultural land out of production unnecessarily. The problems were aggravated by a number of factors which were entirely beyond the control of the administering cadres. However, as can be sensed in the vice-premier's recommendations, the central authorities still regarded the lower levels of administration and the construction units as the main culprits.

On the other hand, the successive changes and

amendments introduced to the land requisition legislation reflect the concern of the central authorities regarding irregularities arising from the inadequacies and weaknesses of state ordinances. At the 58th Meeting of the State Council on 18 October 1957, an amendment to the 1953 and the 1956 Land Regulations was made to further improve the administrative control of land allocation for urban and industrial construction. This legislation was subsequently approved by the 90th Meeting of the Standing Committee of the National People's Congress on 6 January 1958 (see Appendix C).

Although the amendment retained the same number of articles, each of them showed significant improvement in clarity. It provided more specific details in the administrative control of land expropriation, and effective action to be taken against illicit land expropriation and land squandering as an integral part of the inspection system. In particular, two important changes were introduced to further decentralize land administration. First, the Provincial People's Committee was to be responsible for granting approval for using land exceeding 300 mou (c.50 acres) and at the same time where resettlement of less than 30 households was to be involved or it could grant approval for using land less than 300 mou and more than 30 households were to be resettled. The responsibility to grant approval for using land less than 300 mou and involving resettlement of less than 30 households rested on the Hsien (county) People's Committee. Secondly, appropriate authorities were appointed to determine the amount of land needed for each industrial project. Article 4 of the revised regulations

specified that prior to the final approval of the Provincial or the Hsien People's Committee, the size of land to be used for construction must be first determined and approved by the higher authorities of the construction unit, which had been authorized to grant approval for the preliminary planning of the construction projects. Another significant addition to the revised land ordinance should be noted. To prevent the continued practice of taking agricultural land out of production as a result of premature land expropriation, Article 15 of the revised regulations contained provisions allowing members of agricultural producer's co-operatives to continue cultivation of land already expropriated but not used immediately for construction, and preventing removal of crops from fields by construction units.

Although the shortcomings of legislation and administration relating to land requisitioning have been dealt with in this section, an official view published at the end of the First Five Year Plan period epitomized the major forces inducing the wasteful use of land resources:

> Why is it that despite our party's re-emphasis on using land frugally, the phenomenon of land squandering still has not been completely eradicated? To search for the reasons, there was no doubt that under the condition of speedy and large-scale socialist development in our country, some of the land squandering was due to inexperience and inadequate planning, but the main reason was attributed to the failure of cadres in construction units to realize fully and carry out thoroughly the policy of building (our) nation through diligence and frugality. (They) blindly pursued the formality of the so-called 'socialistic standards', and one-sidedly demanded 'bigness', 'newness', and 'loftiness'. (They) failed to pay attention to the benefit of the masses. Moreover, (they) considered only the minor advantage of the (construction) unit,

> but not the broader benefit of the state. Therefore, (they) treated the central directives on using land thriftly and preventing squandering of land with complete indifference, and gave no heed to the practice of wasteful use of land that occurred right in front of their eyes...[44]

The problems of wasteful use of public land may be closely identified with the socialist system, as they also prevailed in the Soviet Union. As revealed by Soviet city planning officials land squandering still persisted during the 1950s. In Kucherenko's view, excessive requisitioning of land by state industries left idle large amounts of land in and around urban centres. Taking advantage of the nominal rent, directors of industrial plants acquired extra land for "emergencies". He further remarked:

> Some designers (city planners) as well as local Soviet officials, incorrectly hold the view that since we have so much land, there is no need to be niggardly with it.[45]

All too often industrial concerns occupied much more land than they needed and part of it remained idle. The management of factories generally kept extra amounts of land on hand for convenience. According to the same source, the building density of factories in the Soviet Union was usually under 20 to 25 per cent, which was well below the national standard for workshop density ranging from 30 to 40 per cent. When compared with the United States, on a per capita basis, the amount of land occupied by factory sites in the Soviet Union was nearly double that in American cities.[46]

Summary

Theoretically the nationalization of land in

designated suburban areas by a socialist state should have provided a sound basis for an orderly spatial expansion of urban centres. However, excessive land expropriation and land squandering produced a large number of sprawling metropolises in China since the implementation of the SARL at the beginning of industrial expansion. When these problems are viewed in a broader perspective, it becomes quite clear that the overwhelming dominance of capital construction in industry over any other sector of development during the First Five Year Plan period must have influenced the attitude, thinking and actions of officials responsible for acquiring land for state industrial construction.[47] After all, land in suburban areas was exclusively reserved for industrial and urban construction and it was entirely free. It is therefore no surprise that the system of land acquisition was widely abused, which led to sprawling expansion of cities, in the absence of proper guidelines for land allocation and effective administrative control over land requisition.

CHAPTER 4 - NOTES

1. Thomas, E., "What Sprawl has done to Central-Place Theory", in: Gottmann, J., and Harper, R.A. (eds.) Metropolitan On the Move: Geographers Look at Urban Sprawl, (N.Y.: John Wiley & Sons, Inc., 1967), p.36.

2. Harvey, R.O. and Clark, W.A.V., "Controlling Urban Growth: The New Zealand and Australian Experiment", in Andrews, R.B., (ed.), Urban Land Use Policy: The Central City, (New York: The Free Press, 1972),p.242.

3. The Agrarian Reform Law applicable to rural areas did not forbid subsequent resale or renting of distributed farm land. Consequently, some of these lands gravitated back to the rich peasants.

   Gurley, J.G., China's Economy and the Maoist Strategy, (New York: Monthly Review Press, 1976), p. 238.

4. Nan-fang jih-pao (Southern Daily), Canton , 25 August, 1951; hereafter: NFJP.

5. Chung-hua jen-min kung-ho-kuo t'u-ti-fa t'san-kao tzu-liao hui-pien, 1957 (Compendium of Reference Materials on the Land Laws of the People's Republic of China, 1957),(Peking: Fa-lü ch'u-pan-she, 1957), p.335.

6. Wang Chi-kuo, "Introduction to the Experience of Land Allocation Work", Ch'eng-shih chien-she (Urban Construction), no.4, 1956, p.17; hereafter: CSCS.

7. Ibid., p. 18.

8. Jen-min jih-pao (People's Daily), 15 January 1954; hereafter: JMJP.

9. Chung-hua jen-min kung-ho-kuo fa-kuei hui-pien 1956, op.cit., p. 343.

10. Ibid., p.344.

11. Ibid., p.344.

12. Shen-hsi jih-pao (Shensi Daily), Sian, 27 June 1957; hereafter: SHJP.

13. Kan-su jih-pao (Kansu Daily), Lanchow, 7 July 1957.

14. Hsin-hua pan-yüeh-kan (New China Semi-monthly), no.24, 1957, p.64; hereafter: HHPYK.

15. JMJP, 31 March 1957.

16. Kuang-chou jih-pao (Canton Daily), 8 June 1957; hereafter: KCJP.

17. Wen-hui pao (The Cultural Contact Daily), Shanghai, 15 November 1957; hereafter WHP.

18. HHPYK, no.10, 1957, p.76.

19. Wang, op.cit., p.17.

20. In China building coefficient refers to building-land ratio within a built-up area.

21. JMJP, 26 April 1957.

22. Ku Ming, "Urban Construction Should Intimately Coordinate with Industrial Construction", Hsin-hua yüeh-pao (New China Monthly), no.2, 1953, p.120.

23. Tso Yen-hsing, "Arrange City Construction Work In Accordance with the Principles of Diligence and Frugality", Chi-hua ching-chi (Planned Economy), no.12, 1957, p.5; hereafter: CHCC.

24. Hsin-wen jih-pao (News Daily) Shanghai, 20 May 1957; hereafter: HWJP.

25. JMJP, 31 March 1957.

26. In China these are areas planted in trees and shrubs, located in factories, schools, and within built-up areas of cities. The writer found this type of land use a common feature in the factories visited in May 1977. They were always well tended, appearing in a lush condition. At the Soochow Embroidery Factory in Soochow, he was told by comrade Chou, chairman of the revolutionary committee at the factory, that the park-like "green area" was looked after by a team of gardeners.

27. CSCS, no.7, 1957, p.2.

28. SHJP, 9 May 1957.

29. JMJP, 8 May 1957.

30. JMJP, 26 April 1957.

31. JMJP, 6 August 1957.

32. CSCS, no.8, 1957, p.19.

33. HHPYK, no.13, 1958, p.70.

34. HHPYK, no.24, 1954, p.63.

35. JMJP, 20 September 1957.

36. JMJP, 2 November 1957.

37. Yun Chung, "Problems of Coordinating Urban Construction Work, Housing, and Service Facilities in New Industrial Districts", CHCC, no.4, 1957, p.13.

38. Ibid.

39. HHPYK, no.7, 1957, p.13.

40. JMJP, 5 August 1957.

41. NFJP, 26 April 1957.

42. JMJP, 26 April 1957.

43. CSCS, no.8, 1957, p.9.

44. JMJP, 7 January 1958.

45. Kucherenko, V.A., "On the State of Urban Development in the U.S.S.R. and Measures for Improving it", Pravda, 8 June, 1960, pp.2-3. Translated in Current Digest of Soviet Press, vol.12, no.23, 12 August 1960, pp.13-23.

46. Svetlichnyi, B., "Soviet Town Planning Today", Voprosy Ekonomiki, no.7, 1960. In: Selected Articles from Soviet Economic Journals in English Translation, Problems of Economics, vol.3, no.8, 1960/61, p.33.

47. Distribution of Investments in Capital Construction (in millions of yüan):

		Percentage of Total
Industrial departments	24,850	58.2
Agricultural, water conservancy and forestry departments	3,260	7.6
Transport, post and telecommunication departments	8,210	19.2
Trade, banking and stockpiling departments	1,280	3.0
Cultural, educational and public health departments	3,080	7.2
Urban public utilities	1,600	3.7
Other items	460	1.1

Source: Chung-hua jen-min kung-ho-kuo fa-chan kuo-min ching-chi ti-yi-ke wo-nien chi-hua 1953-1957 (First Five Year Plan for Development of the National Economy of the People's Republic of China in 1953 - 1957), (Peking: Jen-min ch'u-pan-she, 1956), p.29.

CHAPTER 5

OTHER MAJOR FACTORS LEADING TO DISORDERLY URBAN EXPANSION

Introduction

In the preceding chapter the legislative irregularities relating to administration of suburban land allocation that led to disorderly expansion of Chinese cities during the First Five Year Plan period have been discussed. The present chapter will analyse two related factors: the indiscriminate acceptance of Soviet urban planning principles, and the adoption of Soviet standards for urban space utilization by China's city planners. Before exploring these problems, three significant elements of traditional urban planning in China, and the stagnant urban development during the Republican period, will be discussed briefly, as these will help to place the central theme of the chapter in perspective.

Essence of Traditional City Planning in China

Both archaeological data and ancient Chinese literature have substantiated the long tradition of "planned development" of cities in China. By the Shang dynasty (c. 1500 B.C.) the walled city already had become a part of the agricultural landscape in the western region of the Yellow River Plain, and gradually spread toward east and south China. These early cities did not grow spontaneously from villages, but, almost without exception, were built according to "plans". In more specific terms, planning of these early

urban settlements included the deliberate selection of the physical site, orientation of the city walls and organization of land use within the urban space.

Physical Site Selection for Walled Cities

In most cases, the suitability of a site for city building was primarily based on its geographical characteristics: level terrain and fertile soils for agriculture. The preferred square or rectangular outline of the enclosing walls could easily be built on flat ground. Most of the early urban settlements were located at close proximity to a water course: the Hwang Ho and its tributaries, which provided water for domestic use, transportation, and irrigation for the fields around. Sometimes, the stream, either in its natural form or after some modification, also served as a moat for defensive purposes. P'an Keng of the Shang moved his people to Anyang and built a city on the southern bank of the Hwang Ho. The site must have been ideal for human settlement, as the loess was the richest soil for farming and there were few trees which made the clearing of land unnecessary. A bend of the river formed a promontory, so that the city had a natural moat on the north, the east and a portion of its western front. A range of mountains west of the site which extended for about a hundred miles to the north and more than fifty miles southward, must have offered some protection. The foothills of an eastward jutting spur of the mountain was only seventeen miles away providing timber for buildings

in the city.[1] This Shang city and many others[2] have furnished examples of the relationship between the selection of location of ancient Chinese cities and the geographical environment. Yet, it is important to note that their actual siting depended entirely on geomantic appraisal of the site, and at the advice of geomancers who practised the art of "feng-shui" (literally meaning wind and water).[3] Shu Ching (The Book of Literature) described the elaborate ceremony of selecting the site for a city as follows:

> The founder, wearing all his jewels, jade and precious stones and bearing a magnificent sword proceeds first to inspect the country. To ascertain the points of the compass, he studies the shadows. He examines the declivities, in sun and shade, the yang and the yin of the country, to know how the chief constituents of the world are divided. Finally he takes account of the direction of the running water. It is his duty to recognize the religious value (feng-shui) of the site. In the end he consults the toitoise, and learns from her whether his calculations are correct.[4]

This Chinese cosmological system of Han origin was always employed to harmonize the residences of the living and the tombs of the deceased with the "chi", or the currents of the cosmic breath in the locality. It was believed that good siting of a city would provide favourable "feng-shui" and thereby good fortune to its inhabitants whereas poor location would seriously affect their well-being, albeit the adverse "feng-shui" situation caused by bad siting could be improved by artificial modifications of the natural landscape, such as digging of ditches, tunnels or erection of pagodas inside or outside the city walls.[5] This suggests that there was a possibility for compromise

should the physical attributes found ideal for the siting of the city.

Orientation of City Walls

Most ancient Chinese cities, as revealed by available archaeological records, were surrounded by massive earth ramparts or walls. These walls were primarily built for defense against invasion and flood. Traditionally, the outline of these fortifications was in the form of a square or a rectangle,[6] closely resembling the Greek cities or the Roman castra, and many ancient capitals in Southeast Asia.[7] These geometrical shapes of the cities facilitated their orientation in accordance with the four cardinal directions by means of a compass, or by referring to the sun's rays or the polestar. The form and the orientation of the walled settlements conveyed a great symbolical significance to the ancient Chinese who believed the earth was perfectly square. This idea arose from the simplest way of dividing the azimuth into four cardinal points.[8] To the "city planners" a strong and prosperous city could be built only by obeying the laws of Heaven; its shape must be designed in harmony with that of the earth, and its orientation connected with the position of heavenly constellation, the motion of the sun or the ritual practices for regulating the seasons.[9] A typical city plan consisted of two axial thoroughfares; one ran north-south, and the other east-west. The division of the city into square blocks by streets running straight in the four main dir-

ections[10] was also designed under the influence of the cosmological elements. The ruins of Hantan, a Chan-kuo city, consisted of two adjoining walls of roughly square shape. In the middle of the city proper four earth terraces were located along the north-south axis. Another two square platforms were found in the eastern annex, also lying along the north-south axis.[11] The street plan of some cities exhibited two different alignments due to magnetic declination and the precession of the earth's axis between the time when the city was first built and that when part of the city was reconstructed. When working in Shantan of Kansu province, one of the cities on the Old Silk Road, an archaeologist noticed that the street lay-out seemed to show two different alignments. Further investigation revealed that their difference was about eleven degrees, one due north-south and the other east. This peculiar characteristic which was found in the plans of other Chinese cities may have originated from the divergent advice of geomancers after the discovery of magnetic declination.[12] Another example was found at Kaifeng of Honan province. The walls were inclined eleven and one-half degrees to the east, whereas the city blocks followed the palace of the Sung Emperor, which was oriented due north and south. Therefore one could deduce that the buildings in Kaifeng must have been reconstructed in Sung time.[13] It has also been suggested that Kao-kung chi[14] of Chou-li (Rituals of Chou Dynasty) had exerted an equally important influence on the typical layout of ancient Chinese cities. The regulations laid down for the ideal

plan of the royal capital are as follows: the emperor's city should be a square with sides of nine li (4.5 kilometres or 3.5 miles)(Thus the total area of the city is approximately twelve square miles), each side having three gates. Within the capital there should be nine longitudinal and nine latitudinal avenues; each of the former having a width of nine chariot tracks.[15] This layout for the ideal city, though in a slight modified form, can be seen in the plan of capitals of many dynasties, despite the claim that Peking, Ta-tu of Yüan dynasty, is the only Chinese city built in accordance with this model.[16] It gained wide currency through north Wei dynasty (386-532 A.D.) and was adopted not only in the T'ang capital (618-905 A.D.) but also in cities of the Ch'ing period (1644-1911 A.D.).

The Loyang of north Wei had two main axis which extended to the far end of the suburbs. Instead of having the form of a cross, they resembled the letter "T" in the Latin alphabet. The east-west axis separated the palace complex to the north from the rest of the city to the south. The north-south axis started from the middle of the south wall of the palace city and reached as far south as the north bank of the River I. This axis divided the southern half of the city into two more or less equal halves. The principle of axiality also exerted an important influence upon the planning of the layout of Ch'angan , which the T'ang emperors inherited from the founder of the Sui dynasty (589-618 A.D.). Emphasis seemed to have been placed upon the north-south orientation and thus only the vertical axis was present in the capital. It ran from the mid-point of the south wall of the imperial city lying to

the north of the walled city compound and terminated at the central gate of the south wall of the city. This main axis virtually divided the city into two halves. Other streets running both east-west and north-south cut up the city into rectangular and sometimes square blocks.[17]

Another good example of adoption of the symbolic shape of the walled city and preservation of axiality can be found in Hangchow, capital of the south Sung (1127-1278 A.D.). Despite the difficult terrain conditions and the narrowness of the strip of land where the city stood, lying between the West Lake to the west and the Che River (present day Chin-tang Kiang) to the east and south-east, the outline of the rampart still approached a rectangle. The cardinal axiality was also preserved. After Hangchow was installed by K'ao Chung as the capital of south Sung, a wide thoroughfare was constructed traversing the city from north to south. It was named the Imperial Way. This north-south axial road began from the gate on the north-west ramparts, at Yühang and reached the north gate of the Imperial Palace. Beyond the Palace, it continued southwards to the Altar of Heaven and Earth in the southern suburb. Within the city walls, on the level parts to the north, this major axis was traversed at right angles by streets running east and west.[18]

When the Mongols established the Yüan dynasty (1206-1341 A.D.) and built their capital at Kambulac (Peking), the specifications laid down in Kao-kung Chi for the idealistic city was most rigidly adopted. Only slight modifications were introduced through creativity of the planners and influence of the geographical characteristics

of the site. The city underwent some changes under the Ming emperors (1368-1628 A.D.). The northern part was reduced in size to facilitate defence. A wall was later added to enclose the southern suburb. Notwithstanding these alterations the Ming capital still retained a rectangular shape and the relative locations of the imperial buildings still showed close affinity to the specifications of Kao-kung Chi. Like the Yüan capital the planning of the city took into consideration the hydrography and the geographical factors of the site. Because of the lake serving to supply water to the imperial quarters, the north-south axial road was slightly displaced and hence the central pavilian which should have been placed at the geographical centre of the city was also slightly offset to the east. Instead of a perfectly square outline, the outer walls were constructed in the form of a rectangle in order to avoid the swampy terrain lying immediately east of the site. The imperial palaces, enclosed by an inner wall, were placed at the south, with all the major buildings arranged along the north-south axis.[19]

The prevalence of this long historical tradition of China was much in evidence even in the late Ch'ing period (1629-1911 A.D.). The Ch'ing emperors inherited Peking as their Imperial Capital. During their reign no substantial alteration of the city's layout was made. Planned development of walled cities for the seat of lesser governments were represented by the square or rectangular outline of the city walls and the axial roads, such as those in

Feng t'ien (present day Shenyang), the provincial seat of Manchuria. During the last quarter of the nineteenth century the development of I-lan, Hsin-chu and T'ai-pei-fu as the regional seats of Taiwan by the Ch'ing government involved planned construction of the city walls, durable public structures and other major projects. The principle of axiality was adopted in the construction of I-lan.[20] The walls of T'ai-pei-fu built between 1879 and 1884 had a rectangular outline. Besides the major axial roads, most of the streets of the city followed the cardinal directions.[21]

Organization of Urban Land Use

The spatial organization of various specialized quarters within the walled settlements, a unique element of ancient Chinese city planning, was attested by archaeological records. A rudimentary form of functional differentiation had already emerged as early as the Shang dynasty. The excavation at Hsiaot'un, located at the southern bank of Hwang Ho, about three kilometres to the northwest of Anyang, revealed three functional areas inside the settlement. The first area lying to the north-east of the city, consisted of fifteen rectangular houses arranged parallel to each other were built on stamped earth foundations. Immediately to the south was the second area with twenty-one large square or rectangular-shaped houses, also built on stamped earth platforms. This group of buildings was arranged in three rows on a north-south axis. The central row consisted of three large houses and five gates. The

third area lying to the southwest of the excavation site had seventeen individual stamped earth foundations, arranged according to a preconceived plan. The north-eastern part of the city was interpreted as the residential area, the area lying immediately to its south as the royal temples, while the area to the southwest as the ceremonial quarter.[22] The famous Shang city of Anyang also seemed to have been planned. One of the excavation sites, about sixteen acres in extent, was completely covered with foundations for buildings of considerable size, which suggested the possible location of the royal palaces. Adjacent to this was a handicraft area, including various kinds of specialized workshops that belonged to artisans serving the royal family. At least three separate sections could be differentiated. One of these sections produced bronze articles, as a great deal of by-products of bronze manufacturing: ash, crucibles and broken moulds were discovered at the site. A different section specialized in making stone implements and jade products. Still another section produced bone implements and utensils such as arrow-heads, ladles and hairpins.[23]

The basic components of Shang cities including the aristocratic and ceremonial structures and the specialized handicraft quarters persisted through the entire span of the west Chou dynasty. The traditional spatial pattern of urban functions underwent some important changes after the beginning of the eastern Chou dynasty when iron metallurgy was developed. Introduction of this new technology which greatly stimulated commercial activities further

intensified industrial specialization. Since the late Ch'un-ch'iu period new cities were developed over the north China plain. These fortified strongholds served not only as administrative and religious centres but incorporated within them manufacturing and commercial districts, indicating the growing importance of these economic activities. The inclusion of commercial districts in cities like Cheng Chou and Hou Ma Chen, and the widespread appearance of state currency and the construction of roads in the archaeological records testified the increasing importance of commerce in the urban economy.[24]

Some post-1949 archaeological expeditions have shed new light upon the traditional Chinese urban planning. Several archaeological sites of cities of the periods of Ch'un-ch'iu and Chan-kuo were excavated during the 1960s, revealing a considerable degree of spatial organization of various functional areas in ancient Chinese cities. The royal palace, the ceremonial platforms, the commercial areas, the manufacturing section and the residential areas of the commoners occupied specific locations within the cities, as if they were built according to a city plan. In 1961 the archaeological team of the Hopeh Bureau of Culture excavated Yen Hsia Tu, (the Lower Capital of the State of Yen, one of the seven prominent states of Chan-kuo time, 770-221 B.C.) located to the southeast of the present county seat of Yihsien in Hopeh. Detailed investigations were carried out on the remains of the city enclosures, building foundations, tombs and artifacts. It was discovered that the layout and functional special-

ization of the interior city were different from those in cities of earlier periods. Most of the buildings as well as the palace protected by an additional enclosure were concentrated in the eastern part of the city. North of Wu Yang Terrace, the foundation for the central structure of the royal palace, stood three groups of buildings, each centred around a main structure. The residential areas were located in the southeastern part of the city, which were both impressive and well planned. Surrounding the palace precinct once stood various types of handicraft workshops manufacturing iron implements, weapons, coins, pottery and bone articles. The beds of several old streams and a canal were among some of the important findings of the expedition. The canal was connected with the central Yi River, which was believed to have been used for transporting tax grains into the capital. The geographical location of various functional areas in relation to the streams within the mural area seemed to have been carefully planned. One stream separated the workshops and the palace, providing a better means of defence for the latter. Another stream isolated the cemetery from the rest of the city. All the workshops were distributed at close proximity to the streams, from which water could easily be obtained for various manufacturing activities. The streams also served other useful purposes: they provided a means of transportation within the city or even a linkage with the extramural areas, domestic water supply as well as drainage.[25] Another important early urban site was excavated just before the Cultural Revolution in 1966 by

the archaeological team of Shantung. The excavation was undertaken at Lintzu, the capital of the State of Ch'i (770-221 B.C.) during the late Chan-kuo period. A ground plan quite different from that in cities of earlier period was unveiled at the site. Besides a small enclosure which was confirmed to be the seat of the Ch'i prince and other aristocrats,[26] located at the southeastern corner of the walled city; a much larger area, according to archaeological remains, consisted of discrete functional zones, including the industrial quarters, residential areas, and commercial streets.[27] Without doubt, these relatively recent archaeological discoveries have confirmed the early origin of pragmatic approach in urban planning, though only in a rudimentary form, throughout ancient China.

Other form of zoning approach combining the principle of axiality of the ideal city also prevailed in later periods. It evolved into the concept of dividing the urban space into uniform sized and shaped blocks which displayed a typical chessboard pattern. It was known that in both dynasties of South Ch'i (479-501 A.D.) and North Wei (386-532 A.D.), the traditional spatial organization of the interior of Chinese cities remained more or less the same for over four hundred years. The mural area was divided into "wards" or "hsiang", forming units of functional areas. In Ch'angan, the capital of the Han, there were as many as one hundred and sixty of such wards.[28] This system remained when the city became the capital of Sui (589-618 A.D.) and T'ang (618-905 A.D.). In Pienchou, another T'ang city, there were twenty-four wards. They

were known as "li" or later "fang". The inhabitants of each of the blocks seemed to be engaged in the same business: prostitutes occupied an entire block and instrument shops were in another block.[29] Since mid-T'ang times, the ward system gradually became obsolete, however, the chessboard street plan can still be seen to-day in many Chinese cities despite some modifications due to subsequent rebuilding of part of the cities in an arbitrary way.

Apart from the ward system, the adoption of land use planning in cities and regulations in urban development of metropolitan Loyang in the Northern Wei dynasty (386-532 A.D.) was noted by Ho Ping-ti to have existed in literary records. Though the earliest plans and regulations had long been lost, certain restrictive land use clauses still existed in a long memorial submitted in 517 A.D. by the Grand Minister of Public Works, Ch'eng, prince of Jench'eng. These regulations controlled the encroachment of Buddhist monasteries upon the land originally planned for residential development. One of the ordinances stated:

> ... within the walled city there shall be designated land only for the Yungning Monastery, that within the suburbs there shall be designated land for only one nunnery, and that the rest shall all be outside of the city and the suburbs.

In the old capital city of P'ingch'eng, all its residential wards were allowed to be built only to the south of the palace city, forming the most striking feature in the planned layout of the urban settlement. When North Wei moved its capital to Loyang, half of the city was a separate unit of palaces and imperial parks, while in the rest were located fourteen government offices, nine monasteries and

eight recorded wards.[30] To a remarkable extent, these characteristics of planned spatial organization of urban functions have remained in cities of later dynasties. In Hangchow, the capital of South Sung (1127-1278 A.D.), the hills to the south where the Imperial Palace stood were the residential area of the rich. The high officials resided on the hills of the Ten Thousand Pines. The merchants who had made their fortune in the maritime trade lived on Mount Phoenix, further to the south, whereas commercial areas, artisans' workshops and residential areas of the poorer people all crowded in the highly congested northern half of the city.[31] The functions of Fengt'ien (present day Shenyang) of the Ch'ing dynasty in relation to its internal physical layout were successfully reconstructed in a study, using cartographic records and literary evidence as the major source of information.[32] As far as the principal types of land use are concerned, they seemed to have been designated within the urban space enclosed by the inner walls and outer walls of the regional capital. Like all traditional Chinese cities, the palace was built in the inner city. The majority of government offices concentrated near the approaches to the palace. The ammunition works which adjoined the military hospital were appropriately sited on the fringe of the northwest part of the outer city where vacant land prevailed. The main business districts were strategically located. They occupied the northern half of the inner city, centred along the more northerly of the two east-west thoroughfares, the vicinity of all the gates of the inner city, and the two major

intersections marked respectively by the Drum and Bell Towers.

From the above brief review of selected elements in traditional Chinese city planning, the following synthesis may be made: the classical cosmological system in urban design was a persistent tradition, as the geometric outline and the principle of axiality were adopted by city builders from ancient time up to the late Imperial Era. For siting of cities consultation of geomancers seemed to be the rule, although geographical reality was also taken into consideration. In terms of land use planning within the walled settlements, one may discern two distinct developments. At times land use zoning in cities followed a rational approach, but there were evidences indicating that it was sometimes governed by the principle of social segregation established by the ruling elite.

Urban Development in the Republican Time

The Republicans came to power when the Imperial Era was ended in 1911. During the following thirty-eight years, the layout and physical characteristics of the traditional Chinese cities did not undergo any major transformation. The ancient and medieval wall structures which defined the geometric morphology of the urban centres generally remained intact. The cardinal orientation of the original street patterns were modified to various extents by unplanned reconstruction. Within the city walls many urban structures fell into a dilapidated state.

Modern urban development was confined only to metropolitan Shanghai and other treaty ports where western style architecture and city layouts had been introduced by foreign settlers.

Concurrently, many modern metropolitan cities emerged in western industrial countries and Japan. In fact, by the beginning of the twentieth century the idea conceived by Ebenezer Howard to build new towns to relieve the congestion in British conurbations and to improve the squalid urban conditions of Victorian industrial development had already been translated into the construction of Letchworth and later Welwyn Garden City outside London. The concept of modern land use zoning had long been put into practice in German cities, and in cities of the United States since 1916. In 1919 contemporary urban planning[33] began in Japan, the only industrialized nation in Asia at that time, with the introduction of the first urban planning law.[34] Modern concepts and approach in city planning might have been brought back to China by some of the returning students who were sent abroad under the Shimonoseki Indemnity Agreement to receive foreign education and absorb western experience during the late Ch'ing and early Republican periods. Many of them had hoped for the adoption of these contemporary ideas in city building to remodel the Chinese traditional cities, and to transform them into bases of economic change. Sun Yat-sen, father of the Republic, also had the vision to transform China into a modern nation, modelled after Japan and industrial countries in the west. He proposed ambitious plans on the construction

of deep sea ports on the east China coast, building of a national railway network, improvement of all the major waterways and development of modern industry and mining.[35] Two problems have prevented the realization of these schemes. When the Kuomintang (the Nationalist Party) was in power China had not had a lengthy period of enduring peace. The Northern Expedition to eliminate the warlords was followed in succession by the Japanese invasion and the internal conflict with the communists. The major problem, however, was the lack of capital investment essential for large scale industrial construction and modern development. The control of the badly needed capital was in the hands of several members of China's ruling clique, notably T.V. Soong and H.H. Kung, brothers-in-law of Chiang Kai-shek. They had no real interest in promoting China's modernization, but preferred to keep the nation's revenue abroad. According to reliable estimate, the total Chinese cash deposits in American banks amounted to approximately two billion U.S. dollars during the early 1930's. The landed gentry who monopolized the political organization of the Kuomintang also used their wealth to speculate in land, gold, currency and commodities for their own gain.[36] Chiang openly admitted the inability of the Republican government to carry out Sun's idealization plan of reconstruction and an explanation was given, saying:

> For a period of ten years following the transfer of the capital to Nanking, the National Government, due to the interference of foreign imperialism and the obstruction of anti-revolutionary forces, was unable, however, to carry out its program of economic reconstruction according to schedule.[37]

The lack of action to rebuild the country despite repetitive launching of plans by the Kuomintang was bitterly attacked by one of the outspoken critics of the regime, Professor Chang Hsi-jo, head of the Political Science Department at the Southwest Federated University in Kunming. Early in January 1946, he made a daring speech before a large audience of students. Professor Chang remarked:

> ... It (the KMT) shouts high sounding slogans such as 'for the nation and the people'. It professes to 'bring happiness to the nation and welfare to the people'. But these are mere words... At the beginning of the War of Resistance, the government suddenly became energetic and every ministry published a plan. But there was no co-ordination among the different ministries. The Ministry of Communications wanted to build railroads, the Ministry of War an army, etc. No one stopped to ask if the Ministry of Finance would be willing to foot the bill. Now no one knows what became of these plans. In the second year of the war I attended the People's Political Council at which the government produced a new three-year plan. I asked the head of one of the Yüans (Council) whether this three-year plan included the foregoing two year plan, or was to be started after the two-year plan was concluded. This government official replied: "You're asking me. Whom shall I ask?" Then he added: "Prof. Chang, why be so particular? The plans were nothing but a display of 'intentions' by the government to impress the People's Political Council..."[38]

Even by the late years of the KMT rule not a single one of the national reconstruction schemes that were proposed by Sun Yat-sen more than a decade ago was realized. These words of Professor Chang justifiably criticized the inability of the Republican Government to modernize China, and accurately pointed out the main reason for the failure in achieving Sun's idealistic goal.

Mainly because the KMT failed to institute the industrialization of the nation, the function as well as

the spatial structure of cities remained unchanged. Modern urban utilities such as electric lights, piped water supply system, telephones and sewage system in most urban centres were installed and managed by foreigners. On the other hand, there was no shortage of plans and ideas for urban reconstruction and development. In late 1920s and early 1930s literature concerning western concepts of urban development, building of garden cities, urban land use zoning and urban administration were available. In these volumes one is able to find, for example, general and comprehensive plans for the urban renewal of Chuanghsing (Chuangchiakuo), Amoy and Pengfou, reconstruction of Peking, development of the residential areas in Fengt'ien (Shenyang), transportation improvement in Hankow, and construction of modern harbour facilities at Yüehpu in the Greater Shanghai Municipality.[39] Actual urban reconstruction work on a limited scale started in the 1920s, mainly due to impact of returned students from abroad, who deeply deplored the insanitary conditions, the narrow and winding streets impassable to modern means of transportation and the chaotic land use patterns in Chinese cities. A movement to modernize the city of Chungking in Szechwan, an ancient inland city which became a treaty port in 1891, was launched under local initiative instead of the effort of the Republican Government. As the city was built on very difficult terrain, the streets were narrow and winding, dark and dirty. The first step of the urban modernization scheme involved widening of the streets for motor traffic, followed by installation of electric lights, piped water and an adequate

telephone exchange.[40] Further, because of the shortage of public funds for urban reconstruction, urban development plans in some cities were not implemented, or new projects underway were left incomplete. To alleviate the abominable and extremely unsanitary living conditions of the urban poor in Shanghai, a local group of businessmen proposed a scheme to construct several "civilian villages" in the city. This plan involved the construction of housing estates near existing industrial areas to resettle the residents of the shack areas at Chapei, a municipal district lying to the north of Shanghai. In order to launch such a project a pledge was actually made for private donations to finance the purchase of land and the construction.[41] A plan was drawn up to develop an industrial district and a commercial area in Kunming, the provincial capital of Yunnan in south-west China. According to the plan, this large scale urban project was to be sited in the open space lying to the south of the existing built-up area, and a radial pattern adopted for the layout of the streets. Unfortunately the feasibility of this plan was limited due to shortage of capital.[42] The ambitious and comprehensive development scheme of Kiangwan to convert the northern suburb of Shanghai into the civic centre for the entire metropolis also met with the same fate. The above examples demonstrate the lack of progress in city building throughout the Republican period despite Sun's great expectation in modernizing the nation. Further, during the Sino-Japanese War that raged for eight years, many cities lying along the path of destruction were heavily damaged. The open internal conflict between the KMT and

the Communists that broke out soon after the War prevented large scale reconstruction of these war-torn settlements.

A New Era of City Building and Transformation

An era of modern city building began in China soon after the Chinese Communist Party (CCP) ascended to power. Transformation of the economic role of cities became an integral part of the nation's development policy. According to such a policy, existing "consumer cities" were to be converted into "producer cities", assuming a new role as growth centres of the nation's planned economic development.

In the thinking of the Chinese leaders, the planning and construction of urban centres, at least at that time, must be intimately linked with the state's industrial development scheme that was to be set down in the First Five Year Plan. The following statement clearly indicated the official attitude towards such a relationship:

> The growth of modern cities depended on and followed the growth of industrial development. Our urban construction must be hand-in-glove with the demands on the industrial front, and proceed in accordance with industrial construction. Of course, there will be cities that are to be developed to serve chiefly educational, cultural, and recreational purposes. But, cultural, educational, and recreational cities must also be developed in response to the demands of industrial construction.[43]

Problems in City Building since 1949

Unfortunately, only a small number of cities

inherited by the new government had an industrial foundation. Among these were the industrial centres built by the Japanese in Manchuria, and the treaty ports along the coast and on the Yangtze River. The impact of western influence upon these cities was evident. They were planned and built to suit the need of industrial development, with modern factories, improved transportation and public utilities which almost none of the traditional Chinese cities possessed. This means that the new socialist cities must be planned and built on the foundation of the pre-industrial cities,[44] and modern concept and socialist principles in urban planning must be adopted. Because, although China has a long record of city planning and building, as has been discussed earlier, the traditional administrative and commercial centres of the agrarian society were essentially a ritual and symbolic system, physically planned and sited according to ancient ritual laws and tradition of cosmology descended from the dynasties of Shang and Chou, as well as the prescription of a common belief known as "feng-shui" (geomancy). At the early stage of urban development in the People's Republic, these religious-geomantic concepts in city design were readily rejected by the urban planning personnel who regarded them as irrelevant and unacceptable in the planning of socialist industrial cities. Such an attitude of the planners towards traditional concepts of city planning surfaced during the "Criticizing Confucius Campaign" (Pei-kung yün-tung) in 1975. Chinese urban planners bitterly attacked the emphasis of symbolism in ancient Chinese city planning as advocated by the neo-Confucian school.

Apparently, the deterministic philosophy of the Confucian school on city planning and siting that based on cosmological, symbolic and geomantic considerations implied not only man's desire to conform to nature, but also nature's domination over man. On the contrary, the Legalist school of thought on the pragmatic and realistic approach in city planning, as documented in the book Kuan Tze was much favoured, since it believed the siting of cities should be based on physical environmental factors and the availability of natural resources such as water and fertile soils.[45] To the Chinese city planners the land use organization that was found in many traditional Chinese cities, e.g. T'ang's Ch'angan, North Wei's Loyang and South Sung's Hangchow, was merely a system of social segregation, whereas a socialist society should be "classless" and uniform throughout in socio-economic characteristics. Also, in socialist city planning land use organization should be based on the "neighbourhood" concept that emphasized "integration of functions" and "independence of interrelated units". These socialist concepts and principles in city planning were adopted by Chinese urban planners from their Soviet counterparts during the early phase of urban reconstruction in China.

In January 1959 the vice-minister of building commented favourably on the success in urban construction within the decade 1949-1959. He remarked:

> After liberation, construction went ahead in more than two thousand and one hundred cities, towns and industrial areas. One hundred and sixty-seven new towns that cannot be located on the older maps have risen. One hundred and twenty-four have undergone extensive reconstruction and expansion.[46]

But in fact, the planners encountered numerous problems in the task of city building. Construction work on cities could not be started as no data or plans existed, not to mention the acute shortage of administrative, financial and planning resources needed to cope with the enormous task of planning and building large modern industrial cities. Indeed, Mao's remarks on the poverty and lack of scientific knowledge of China may be used to describe the paucity of such resources in urban planning in the People's Republic. Mao commented on two major weaknesses of China:

> We are very poor and have not much knowledge. We are first 'poor' and second 'blank'... By 'blank' I mean that we are like a blank sheet of paper, since our cultural and scientific level is not high.[47]

As a matter of fact, when large scale industrial construction in selected key-point cities began after the completion of the period of national reconstruction and rehabilitation at the end of 1952, no comprehensive urban plans were available. Therefore there was no co-ordination between long term planning of industrial construction and that of the development of various urban functions within urban centres, as exemplified by Anshan, a steel manufacturing centre in northeast China. This exerted a detrimental effect upon the progress of capital construction[48] and slowed down the speed of industrialization. The Anshan experience was publicized to provide a lesson for planning personnel in other industrial cities:

> ... old industrial cities require reconstruction and expansion, and new cities will be built everywhere. We have experience neither in large scale industrial construction nor in urban construction. Now we are facing the following problems: what kind of a city are we going to build? What will be the scale of

> development (of the city) within the next five or ten years? To solve these problems (we) must first set up a long term plan for industrial development which co-ordinates with the urban plan of the city. Our experience in Anshan in 1952 proved that without a comprehensive urban plan, it would not be possible to build a new city well. It would greatly impede the progress of industrial development. Under the assistance of Soviet experts the long term plan for the expansion of the Anshan Steel Complex was drawn up, but there was no plan for the city. Therefore when the Anshan Steel Plant built several hundred thousand metres of workers' housing, the city had to refer to the 'Capital Construction Plan' prepared by the Japanese during their occupation of the city in the "Manchukuo Era". That construction plan was obviously unsuitable for our construction need: it divided Anshan into the Japanese residential district to the east of the railway, and the Chinese residential district to the west side of the track, while the commercial district was designed according capitalistic planning methods. Since time did not allow for surveying and making a new plan, a method to improvise had to be adopted, which consequently wasted much time on altering the layout of streets in the residential areas. Besides, because there was no comprehensive urban plan, work on constructing sewage and roads, and installing electric lights and gas lines could not be coordinated simultaneously with the construction work on residential housing. Transportation and manpower were used unnecessarily, and large sum of money wasted on installing temporary supply of electricity and water in building of temporary roads. Such problems also existed in other cities...[49]

Indeed, the early 1950s witnessed a period of chaos in urban development in the People's Republic. This was the inevitable result of the official policy to push for industrialization while no complete urban plan had ever been drawn up for building a modern metropolis where large number of industrial projects were to be located.

Many cities committed the grave mistake of hastily proceeding with new municipal and industrial construction even when no comprehensive urban plan was

available. An official appeal for improving urban construction work that appeared in less than two years since the initiation of the nation-wide urban construction programme reflected the cause and nature of the problem:

> ... in some places urban construction work has not been seriously grasped and there were no comprehensive planning and unified leadership in urban development. Factories, residential housing, transportation facilities were not rationally distributed; in some cities housing projects were built inside industrial districts and factories erected within residential areas. Waste water from factories located upstream often polluted water supply for industrial and domestic uses in cities downstream... Demolition of new structures often prevailed. If these chaotic conditions and blind approach (in urban construction) continue, problems in future reconstruction of old cities will be aggravated... (We) must speedily strengthen the comprehensive planning work of building important industrial cities... Regardless whether we reconstruct old cities or build new ones, our work must not be carried out chaotically as in capitalist cities, but should be (carried out) according to the principle of economy, utility and aesthetics. (We must) construct our cities systematically and according to plans. Therefore, comprehensive plans should be drawn up for important industrial cities, with reference to their future prospects and scale of development, and in accordance with the geographical distribution of industry in the nation's first Five Year Plan, the essential qualities of these cities, and the natural factors. Only if (we) seriously prepare comprehensive urban plans that (our city construction work) shall be able to coordinate intimately with the need of industrial construction. We will be able to proceed systematically according to the general city plans, to avoid chaos, and make fewer mistakes...[50]

However, despite such urgent appeals for close coordination in urban and industrial development, even in 1955, the midpoint of the First Five Year Plan period, unified arrangements in urban development still could not be implemented in many important cities because comprehensive urban plans could not be prepared in time. This lack of city plans had already seriously affected the construction of industries,

residential housing projects and transportation facilities in the key-point cities.[51] The inability to draft plans for urban development was evidently attributable to two reasons: first, at the beginning of the First Plan period, none of the cities in China possessed a collection of physical, social, economic and demographic data which was absolutely essential for the preparation of urban plans. Paradoxically, Shanghai, being a city not initially designated for intensive industrial development, was the only urban centre that initiated the collection of urban data by the end of 1951, and the preliminary plan for the city was not completed until September of 1953.[52] It was not until the first part of 1954 that several other cities began the collection of data for urban planning. Seven cities in the Central South District, including Wuhan, Hwangshih, Chengchow, Hsinhsiang, Chuchou, Kwangchou and Chanchiang, which had been designated as important centres for industrial construction and focus of urban expansion, announced the establishment of urban construction committees. The first task of these new official organizations involved the collection and analysis of data concerning meteorology, hydrography, geology, topography, economics and demography to provide the necessary basis for drafting comprehensive urban plans.[53] Secondly, China faced another severe handicap at the time when the programme for urban reconstruction and industrialization was first introduced. There was an acute shortage of trained technical and engineering personnel in various specialized fields. When the Chengtu-Chungking Railway was to be constructed in the interior

province of Szechwan, railway construction engineers and technicians had to be recruited from the Northeast.[54] The shortage of urban planners posed a particularly serious problem in implementing the programme of urban construction at key-point cities which had been assigned first priority for large scale development. There were few urban planners in the entire country at the time of liberation and even several years thereafter:

> ... five years ago, city planning in China was comparable to a blank piece of paper. The graduates in city planning to-day were illiterates. Nobody even knew what socialist urban planning was. Since the beginning of planning of the eight large key-point cities designated for industrial development such as Sian and Paotou, with the assistance of Soviet experts, (we) learned (about)urban planning while (we) worked. From 'have not' to 'have', from 'point' to 'area', and from 'do not know' to 'know', (we) established step by step this special field of science. Urban planning departments had been set up in some provinces and cities, and faculty of urban planning introduced in four universities ...[55]

Although the number of town planners had risen to over 1,600 in 1958,[56] this number was still far from adequate for the urgent nation-wide tasks of constructing large numbers of new industrial cities and reconstructing existing manufacturing centres during the First Five Year Plan period.

Emulation of Soviet Model in Urban Planning and Construction

Quite naturally, because of the close alliance between China and the Soviet Union during the early 1950s, technical know-how in urban planning, as well as in economic, social and cultural developments that China urgently needed were sought from the Soviet Union. Under the Mutual Aid

and Friendship Alliance Treaty of 1951, the Soviet Union agreed to provide China with over 825 large industrial projects to be installed and constructed during the First Five Year Plan period.[57] Under the same agreement Soviet advisers provided direction on the selection of key-point cities where new industrial plants were to be located, and assisted in selecting factory sites in cities of the northwest, central-south and Inner Mongolian Autonomous Region. Besides, the Soviet experts participated in general urban planning of the eight large key-point cities, including Sian, Lanchow, Paot'ou, Wuhan, Loyang, Taiyüan, Tatung and Ch'engtu, as well as contributing valuable ideas and suggestions to the planning and construction work of Peking, Shanghai, Tientsin, Shenyang, Harbin, Anshan, Chengchow and Shihchiachuang.[58] Admittedly, Soviet aid played a vital role in China's initial industrial development effort, providing technical assistance, industrial equipment and materials which China could not have obtained elsewhere at that time, albeit in the field of urban and suburban planning, the Russians themselves had been plagued with difficulties in the 1950s. Although the Soviet Union is one of the most advanced western nations in many scientific and technological fields, yet, during the 1950s the country was at an appreciable distance behind many non-socialist European countries, including the United Kingdom, France, Germany, the Netherlands and Sweden in the sphere of urban planning and development. There is ample evidence indicating concurrent chaotic developments in Soviet cities and their suburban areas, as well as acute

shortage of urban planners in the Soviet Union. N. Baranov, member of the U.S.S.R. Academy of Construction and Architecture, noted numerous acute problems in the nation's urban and suburban developments. The most serious of these included the incorrect selection of sites for the construction of newly developed sections in cities, the chaotic growth of urban centres, and the irrational use of urban and suburban lands.[59] A number of articles in Soviet publications which appeared in the late 1950s and early 1960s mentioned the confusing development in Soviet cities and the prevalence of urban sprawl in the Soviet Union, especially in the rapidly growing large cities. V.A. Kucherenko, chairman of the U.S.S.R. State Construction Committee criticized the way in which land use zoning lagged behind urban construction in Stalinabad. As a result, 400 hectares of land near the centre of the city were still under cotton. In the same connection, he pointed out that some 600 cities in the Soviet Union still did not have general plans. Plans for urban development have been drawn up for only a few urban centres such as Moscow, Leningrad, Kiev and a few other major cities. Even in cities where urban plans were available, construction of private dwellings and "dacha" (summer cottages)[60] took place on land designated in the general plan for the erection of multistoreyed apartments by the state.[61] Too often, industrial districts in or around cities were established without a master plan. Consequently, they were built up in a state of confusion without proper coordination with future urban and suburban developments, and without integrated control under the municipal admin-

istration. Furthermore, no specialized planning bodies with the necessary experience in integrated urban-suburban planning existed, nor was there a basic theory or methodology for that purpose in the Soviet Union.[62] Kucherenko also cited the non-existence of integrated urban-suburban planning as the main cause of disorderly spatial growth of urban centres in the Soviet Union. Like their counterparts in most western developed countries, cities in the Soviet Union generally did not have detailed and approved planning and construction designs for suburban areas. Factories sprouted up along transportation arteries outside city limits and in areas best suited for recreational use. In many suburban areas incompatible land use practices were common. Large areas contiguous to cities were occupied by individual housing developments, intermixed with warehouses.[63] In the late 1950s these private housing developments proceeded chaotically at the urban fringes, to the detriment of the interest of urban development as a whole, and brought about shortage of convenient and improved construction sites in cities.[64] Often even sand and gravel quarries were found within built-up areas. The noted Russian urban planner therefore strongly urged the implementation of integrated planning of the urban area and its suburban zones in Russian cities.[65] It was advocated that a system should be developed and instituted, under which all types of construction in the suburban areas would be under the jurisdiction of the urban executive committee. Further, the land use plan for the suburban zones should be part of a city's general plan, and the chief planner's

authority should extend over the suburban areas.[66] I. Nikolayev, member of the U.S.S.R. Academy of Construction and Architecture, disclosed some grave errors in Soviet city planning. In 1958 several 'sputnik' settlements including Elektrostal, Khimki, Krasnogorsk and Kryukovo were built outside Moscow's city limits, based on a concept not dissimilar to that of Britain's new towns to channel urban growth and population pressure from metropolitan cities. An unusual problem emerged in Kryukovo, Moscow's first satellite town located eighteen miles northwest of the capital on the main railway line to Leningrad. There was no definite idea of what new industrial enterprises should be built and where in the new town even in its second year of construction.[67] This appears to be truly a case of putting the cart before the horse - a practice that seems to be typical of Soviet city planning during the 1950s.

Although without doubt the absence of unified urban-sububran plans and the lack of coordination between various departments responsible for municipal construction contributed to the chaotic land use development in Russian cities and their environs during the 1950s, another major weakness in Soviet city planning at that time should not be overlooked. Even by 1960, over four decades had already lapsed since the initiation of the country's industrialization and urban building programme, only 212 or less than one-quarter of the 875 cities in the Soviet Union had their own city planners.[68] In some of these cities the post of city planner was often occupied by an insufficiently qualified person. For example, among the twelve chief

urban planners in the Kazakh Republic, five had been trained as construction technicians and one was even a geodetic engineer.[69] The general shortage of urban and regional planning personnel was attributed to the lack of educational institutions for training planners in this specialized field. As of 1960, town planners in Russia were trained only in the Moscow Architectural Institute and the Leningrad Institute of Construction. Less than 40 students enrolled in these two schools in 1959.[70] Based upon the above evidence relating to major weaknesses in Soviet city and regional planning, the quality of the Soviet contribution toward urban and suburban planning and development in China during the period of Sovietization in the 1950s may be seriously challenged.

During the early 1950s, a period of close Sino-Soviet alliance, when planning of China's industrial centres relied solely on the Soviet 'experts', many major cities, particularly the key-point cities, underwent a very fast rate of spatial expansion as well as a rapid growth of urban population. It was unprecedented in the urban history of China if measured on a nation-wide basis. Within a span of only eight years many cities expanded several times their original areal extent at the time of liberation. By far the fastest rate of areal expansion occurred in the new industrial centres. This clearly demonstrates the direct relationship between industrialization and spatial growth of cities during the period. Table 5.1 shows that the built-up area of Chengchow, a key-point in the province of Honan, increased almost nine times from 1949 to 1957.

TABLE 5.1 Spatial Expansion of Selected Chinese Cities 1949-1957 (square kilometres)

City	1949	1957	Total Area Increased	Per Cent
Peking* (National Capital)	60[a]	240[b]	180	300
Sian	13[c]	65[c]	52	400
Chengchow	5.23[d]	52[d]	46.77	894
Ch'engtu	29.9[e]	280.55[e]	250.65	838.3
Shanghai*	80[f]	116[g]	36	45
Tientsin*	61[h]	97[h]	36	59
Tangshan	18[i]	30[i]	12	40

Note: Cities underlined are key-point cities designated for intense industrial development during the First Plan period, whereas those with an asterisk are special municipalities which have the same administrative status as the provinces or the autonomous regions, and are under the direct administration of the central government.

Sources:

a Chang Sen-dou, "Peking: The Growing Metropolis of Communist China", The Geographical Review, volume 55, number 3, July 1965, p. 319.

b Chien-chu-chung te Peh-ch'ing (Peking Under Construction),(Peking: Jen-min ch'u-pan-she, 1958), p.5.

c Ch'ang-chiang jih-pao (The Yangtze River Daily), Wuhan, September 27, 1957.

d Chien-chu hsüeh-pao (Journal of Architecture), no.11, 1959 , p.13.

e Ch'eng-tu jih-pao (Chengtu Daily), 12 September 1957.

f. Hsin-wen jih-pao (News Daily), Shanghai, 8 August 1957.

g Wen-hui pao (The Cultural Contact Daily), Shanghai, 2 November 1957.

h Ti-li chih-shih (Geographical Knowledge), no.11, 1958, p.495.

i Ch'eng-shih chien-she (Urban Construction), no.10, October 1959, p.42.

During the same period the built-up area of Peking increased by three times. Even the urban area of Shanghai, a city on the eastern seaboard not originally designated for active industrial growth, expanded by almost fifty per cent.

The emergence of metropolitan cities was primarily attributable to heavy dependence of China upon Soviet industrial planning and urban design when it launched its national industrialization programme in 1953. The Chinese economic planners adopted the Soviet concept of industrial centralization which located massive industrial projects in a few selected urban centres. As a result, most of the large industrial projects clustered in the eighteen key-point cities. At the beginning of the First Five Year Plan period, China built 11 to 20 above-norm[71] industrial plants in each of 12 cities and over 21 projects of similar size in each of 6 industrial centres. In Sian, an important key-point city in the interior, 42 large industrial projects, 14 post-secondary colleges, 22 secondary and vocational schools and 30 cadre training centres were built within a short span of five years.[72] Similar patterns of industrial concentration also prevailed in other cities. An article on the problem of industrial distribution revealed that an exceedingly large number of textile factories were concentrated in Peking, Shihchiachuang, Hantan and Chengchow. Certain departments of industry established 10 plants in Sian and 6 plants in Taiyüan.[73] Such a high degree of concentration of large numbers of industrial plants in a few nodal industrial centres was evidently typical in Poland and Hungary,[74] eastern European satellites of the

Soviet Union, which have followed closely the Soviet model of industrial centralization.

The indiscriminate acceptance of Soviet theories and principles of urban planning by Chinese urban planners also contributed to rapid spatial expansion of Chinese cities. Plans of large Soviet cities were universally adopted for use in designing Chinese cities, despite wide variations between Russian and Chinese urban centres with regard to size, type, geographical location and terrain characteristics. Consequently, cities in China were not designed according to the conditions in the country, or the geographical diversities of individual cities:

> Regardless of large cities or small cities, northern cities or southern cities, old cities or new cities, the formulating method and contents of the urban plans were all exactly the same.[75]

The plan for even a small worker's town of less than twenty thousand inhabitants would include all the urban features and amenities of a large city: large municipal public squares with wide central boulevards and central axis road, emulating Tien An Men Square in the national capital, civic centres for municipal government buildings, district parks, three sports stadiums, cultural palaces and a cinema house.[76] Improper land use planning also contributed to rapid spatial growth of cities in China. An extensive "green area" unnecessarily included in the urban plan of Pehtaiho, a seaside resort located in an already well wooded environment, and with very low population density, was a case in point.[77] Also, public squares, typical features in Soviet cities, have become basic land use components in many plans for

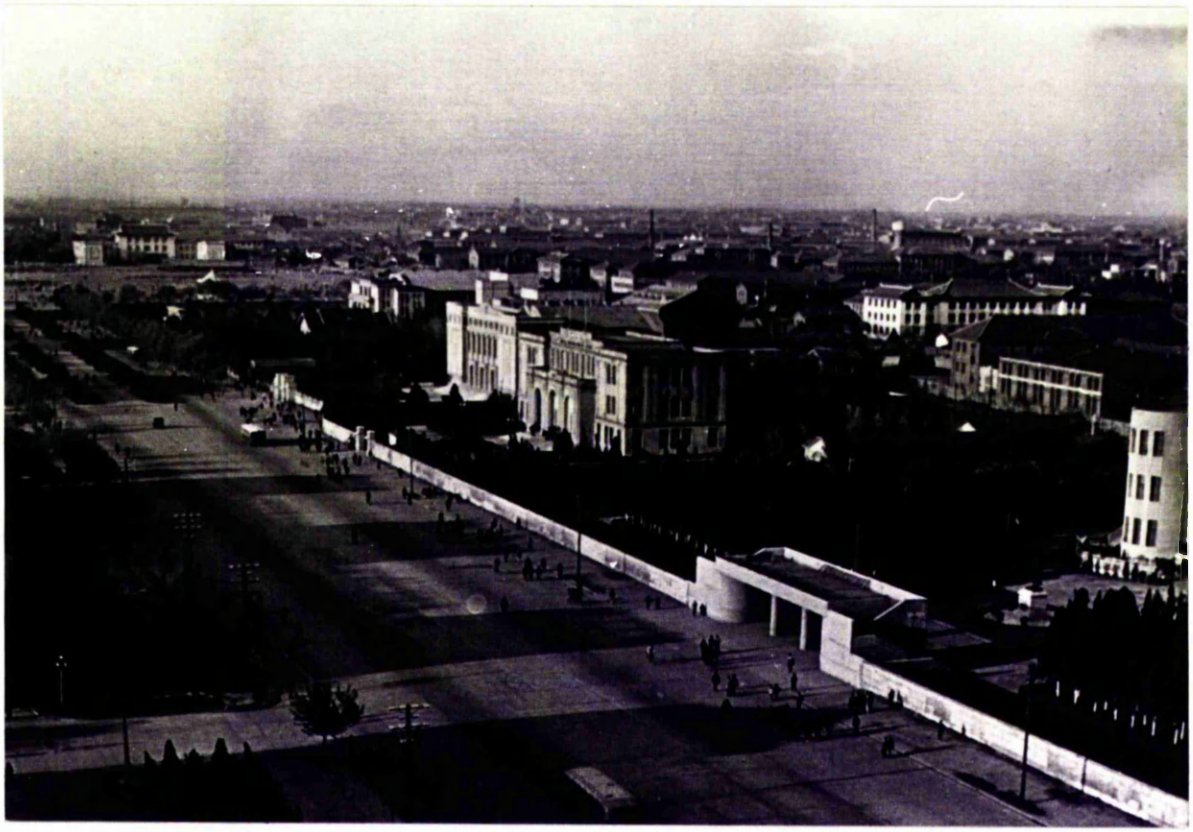
Chinese cities. These have included municipal central squares, district central squares, traffic squares and other squares of special types. All of them occupied large amounts of land. In the two comparative plans of the city centre of Chengchow completed in 1956, one of the city centre square measured twelve hectares and the other eighteen hectares. In ten of the comparative urban plans exhibited in Peking, the area of some of the municipal centre squares was as large as thirty hectares.[78] Further, the area of the municipal central squares in the urban plans of Lanchow, Loyang and Harbin exceeded the nine hectare Tien An Men (Gate of Heavenly Peace) Square in Peking. In some cities, even the district central squares were planned to be larger than Red Square in Moscow.[79] In order to provide space for large municipal public squares, large public works and 60 metre wide boulevards in the centres of existing cities, a large number of buildings and residential housing, generally still in good conditions, were demolished to make room for these developments. Prior to the completion of the urban plan of Paoki in Shensi, the planning personnel conducted a survey on the progress of demolition in the city. The result showed that 230,000 square metres or an equivalent of 40 per cent of existing buildings in the city had been pulled down. In the cities of Peking, Wuhan, Taiyüan and Lanchow, one official report disclosed that since liberation, a total of 2,080,000 square metres of built-up area had been demolished. As much as one-fifth of the existing buildings and dwellings in Taiyüan and Lanchow were taken down to make way for new construction. According to the

data of National Bureau of Statistics, the total demolished area in 175 cities in 1956 amounted to 2,480,000 square metres.[80] In absolute terms, the amount of demolished area in Chinese cities may not seem to be significant, as it equals only about twice that in the urban renewal district in Hong Kong (about 1,200,000 square metres).[81] However, it is a wasteful use of land resource because the removal of housing stock gave way to low density development - building of spacious central public squares and wide axis roads for the beautification of existing cities. In the case of Hong Kong, on the other hand, many five or six storey buildings that might have been built only a few years ago were pulled down for the construction of twenty or more storey buildings in order to increase the density of use of the valuable urban land in the Colony (Photo 5I).

Adoption of Soviet Standard for Urban Space Utilization

When considering the causative factors contributing to the fast spatial expansion of Chinese cities during the first half of the 1950s, construction of housing estates for industrial workers and urban poor, or establishment of new residential areas in cities by the state government should be taken into consideration.

Before 1949 most of the Chinese cities were highly congested. In some urban districts in Shanghai, for example, the population density reached 1,500 persons per hectare,[82] i.e. over 600 persons per acre. During the Sino-Japanese war the old city area of Chungking had a population density of 65,000 persons per square kilometre,[83]



5.I. The August First Boulevard in Nanchang - A Medium-sized City.

an equivalent of over 263 persons per acre. If these density values were calculated in terms of actual dwelling space, the resulting figures would have been much higher. Besides, many deprived urban residents lived in appalling slums. In Shanghai a large number of factory workers, pedicab drivers and stevedores lived in the notorious pang-fu ch'ü (squatter area), generally located at close proximity to industrial areas near the Soochow Creek and along railway tracks and the east bank of the Hwangpoo River. The unsanitary and crowded conditions of these spontaneous dwellings were comparable to those of the bustees in Calcutta or the barong-barongs in Manila. Before launching the industrialization programme, the new administration declared removal of these degrading urban dwellings and building of new housing for their settlers the most urgent task in urban reconstruction programme.

From 1952 to 1956 the total floor space of residential housing and workers' dormitories completed amounted to 65,150,000 square metres, or over 45 per cent of the 145,260,000 square metres of capital construction.[84] The total amount of dwellings completed by the end of 1956 actually had surpassed the First Five Year Plan target by 41 per cent.[85] Remarkable progress was made in the increase of floor space of residential housing in all key-point cities. By 1956 the amount of floor space of new housing completed in Taiyüan surpassed that of dwellings built before 1949 by two and one-half times, and for Chengchow the 1959 figure even overtook that of the pre-liberation period by seven times. (Table 5.2) A selected sample

TABLE 5.2 Increase of Floor Space of Dwellings in Selected Cities Pre-1949 to 1959 (in million square metres)

	Pre-1949	1956	1957	1959	Per cent Increase
Peking	12.93[a]	n.d.	20.34[a]	n.d.	57.3
Shanghai	n.d.	n.d.	19.38[b]	24.08[c]	29.0
Taiyüan	n.d.	2.24[d]	n.d.	n.d.	250.0[d]
Chengchow	n.d.	n.d.	n.d.	3.17[e]	700.0[e]
Sian	2.25[f]	n.d.	5.05[f]	n.d.	125.0[f]

Sources:

a Editorial: "Reduce (Space Utilization) Standard for Buildings", CSCS, no.6, 1957, p.12.

b HWJP, 4 September 1957.

c Office of Shanghai Municipal Construction Bureau, "Building the New Socialist Shanghai, CSCS, no.10, 1959, p.28.

d Yun Chung, "The Problem of Coordinating between Municipal Engineering, Residential Housing and Service Facilities and Others Under Construction in New Industrial Districts", CHCC, no.4, 1957, p.13.

e Committee of Construction, Department of Planning and Administration at Chengchow, "Urban Planning and Construction of Chengchow", CCHP, no.11, 1959, p.14.

f Shen-hsi jih-pao (Shensi Daily), 30 April 1957.

also showed that, in terms of floor space, housing construction in Peking, Paot'ou, Lanchow, Taiyüan, Wuhan and Loyang, equalled 50 per cent of the existing housing stocks in these industrial centres.[86]

In the present discussion on the spatial impact of new housing construction, it is significant to point out that urban planning authorities in many Chinese cities,

especially the key-point cities, employed the Soviet standard of residential space utilization as the basis for determining the amount of land to be used for residential areas or housing estates in cities. It is true that some cities used the state's prescribed standard of 4 square metres per capita, but, as will be discussed later, there were some which employed a standard well above that used in Soviet cities. According to the Soviet system, residential land in urban areas was divided into two major categories. The first type is known as "dwelling space"; area available within dwelling units, and the second "living space": land for communal uses, public buildings, open space or parks, and roads or squares. In quantitative terms, the norms used by Soviet planners in the 1950s for dwelling space was 9 square metres per person and that for living space 76 square metres per person.[87] The adoption of such standards by Chinese urban planners was criticized by the visiting Polish delegation of urban planners and architects as far too extravagant for the Chinese.[88]

Because of the similarities of the characteristics and objectives between the housing estates in China and the resettlement housing or the Government Low Cost Housing in Hong Kong, a comparison between the amount of dwelling space and the living environment of the two types of housing schemes may provide a means to assess the suitability of the Soviet standard for Chinese cities.

Since 1954 the government of the British Colony embarked upon an ambitious programme to resettle a large number of squatter dwellers. By 1969 more than 40 per

cent of the metropolitan population of over 3,500,000 was accommodated in these resettlement estates.[89] With regard to the dwelling space standard for this type of housing, only 24 square feet (2.2 square metres) of floor space was apportioned to each adult and half of that space to each child. Since 1969 it was increased to 35 square feet (3.9 square metres) per person.[90] The ground floor of the resettlement blocks was generally occupied by retail stores, while the roof tops were used for playground or exercise areas for schools. Within the community there were no green areas or parks. The other public housing scheme in Hong Kong was the Government Low Cost Housing. It served to ease the enormous pressure of housing shortage in the Colony, and its tenants were mainly low to medium income white collar workers. The standard for dwelling space of this type of public housing was higher than that of resettlement housing, at 45 square feet (4.2 square metres) per person.[91] Because of acute shortage of land in Hong Kong, no provision was made for parks or green areas in the vicinity of these housing estates. In China, on the other hand, a large number of housing estates was also constructed in cities early in the 1950s. One of these housing projects, Tsao-yang Hsin T'sun (Tsaoyang New Village), was built in Shanghai in 1951.[92] This workers' housing estate occupied an area of 94.6 hectares, with a population of 26,241 persons. The population density of 278 persons per hectares represented a significant improvement over the city's average density of 604 persons per hectare in 1947.[93] The dwellings at Tsaoyang were mainly two-storeyed structures of standard design, providing an

average dwelling space of 4 square metres per capita.[94] This was the state's prescribed standard of floor space per person for dwellings in the early part of the 1950s. It was not only higher than the national average of slightly less than three square metres per person, and well above the average dwelling space standard of many large cities in 1956-57, including Shanghai itself, (see Table 5.3) but also exceeded the post-1969 standard for the resettlement housing in Hong Kong. With regard to land for other uses within the housing estate, Tsaoyang Hsin T'sun provided its inhabitants 27 square metres of "living space" per capita: comprising 10 square metres for public buildings,[95] 10 square metres for parks, 1 square metre for public squares, and 6 square metres for roads.[96] Then, the total amount of residential space per capita at Tsaoyang reached 31 square metres, which none of the public housing in Hong Kong was able to match, including the more spacious subsidized housing providing 55 square feet (6.1 square metres) of dwelling space per person.[97] Nevertheless, the residential space standard employed by Shanghai's urban planners became quite modest when compared with the Soviet standard for dwelling space at 9 square metres per person and that for living space at 76 square metres per person.[98] It is worth noting that the standard for dwelling space used for designing new dwellings in the key-point industrial centres of China surpassed, by a considerable amount, the 4.7 square metres per capita which the Soviets were able to reach in 1932.[99] Even after more than two decades later, in 1955, the dwelling space per person in the Soviet Union

TABLE 5.3 Average Dwelling Space per Capita in Selected Large Cities 1956-1957 (in square metres)

Shanghai	2.97[a]	Lüta	3.18[d]
Canton	2.80[b]	Tientsin	2.50[e]
Taiyüan	1.90[b]	Ch'angch'un	3.40[f]
Peking	4.20[c]	Wuhan	3.06[g]
Nanking	3.20[c]	Nat'l Avg.	3.00[h]

Sources:

a HHPYK, no. 24, 1957, p.63.

b Pan Tze-yun, "On the Schedule of Urban Construction and Prescribed Standard of Dwelling Space for our Nation", CSCS, no.8, 1958, p.22.

c Ibid., p.25.

d JMJP, 6 January 1957.

e Editorial: "Learn the Ability to build Cities through Diligence and Frugality upon the Foundation of Seriously Undertaking Rectification", CSCS, no.7, 1957, p.2.

f Ch'ang-ch'un jih-pao, (Changchun Daily), 30 December 1956.

g Sun Kuang, "The Pressing Need to Control Urban Population Growth", JMJP, 27 November 1957.

h Editorial: "Lower the (Space Utilization) Standard for Buildings", CCHP, no.8, 1956, p.13.

Note:

These values tallied near the end of the First Plan period are strikingly low. This is probably due to the rapid growth of urban population in large cities despite the fast pace of residential housing construction since 1951. The amount of dwelling space per capita fared better in smaller cities, for example, the average value for Changsha was 6.5 square metres per person, and that for Nantung, Yangchow and Wusih was 8 square metres per person. These statistics were obtained from: Wang, CCHP, no.4, 1958, op.cit., p.7.

was only 7.4 square metres.[100] This implies that the urban planners at China's new industrial cities strived to achieve within the First Five Year Plan period what the Soviets had failed to attain within a period of over half a century since the Bolshevik Revolution. By way of comparison, the dwelling space per capita in China's key-point cities also overtook that of Urban Japan at 7.5 square metres[101] and that of public housing in Singapore's new towns at an average of 6.2 square metres in the 1970s.[102]

It would be of interest to compare the allocation of urban space per capita of China's new industrial cities with that of Britain's new towns, as Britain has a long history of modern city planning and she also initiated a programme of new town development early in the 1950s. To facilitate comparison an assumption was made that the residential area in the Chinese cities occupied an average of sixty per cent of the total urban space. In that case, the average amount of urban land allocation would then be about 36 acres per one thousand population. This amount equalled approximately two-thirds of that allotted to the residents of British new towns at an average of 54 acres per one thousand population, as recommended by the Reith Committee in 1946.[103] In absolute amount the residential space standard adopted by the Chinese was lower, but it was actually more generous, should consideration be given to the fact that Britain had more arable land per capita,[104] the average agricultural yield per unit area was higher, and the Britons had been accustomed to a more spacious living environment and were less tolerant of overcrowded

accommodation.

It should be mentioned, too, that in some cases the space utilization standard used by the Chinese even exceeded that of the Soviet. An investigation disclosed that the state owned Chengchow textile machinery factory employed 3,955 workers. Since its establishment 50,659 square metres of workers' housing had been constructed, among which 39,361 square metres were for married workers and 11,298 square metres for single workers. If these dwellings were to house all the workers in the factory, each would have had 12.8 square metres of dwelling space.[105] In Chungking the norm for dwelling space per person exceeded 10 square metres, and that adopted for long term residential development even reached 12.6 square metres.[106] Under such circumstances if the Chinese were able to build high-rise structures, the pressure on agricultural land at the city fringes would have been less intense. However, because of technical constraints and shortage of reinforced building materials, most of the residential housing built during the First Five Year Plan period were either one or two storeyed structures. The adoption of generous dwelling space standard inevitably accelerated the horizontal spread of built-up areas of cities into the surrounding countryside. In January 1957 the head of the Architectural Planning Bureau discussed the serious problem of land shortage, and announced that, in order to achieve more rational use of land from then on, the construction of single-storeyed dwellings would be limited and multi-storeyed buildings encouraged.[107]

Another category of land use in Chinese cities that formed an important component of the urban plan was green space, as it occupied at least 25 to 30 per cent of the total urban living space.[108] In the process of city building, the new government placed great emphasis on improving the living environment in urban areas. Since the early 1950s a nation-wide programme of afforestation had been implemented in cities as well as in the countryside. This was a response to Mao's call to cover the country with trees and make the motherland into a garden. Within less than a decade, many urban streets were under a complete canopy of trees.[109] Major industrial cities such as Ch'angch'un and Shenyang in northeast China possessed a green heart of forested parkland.[110] In Nanking, a city notoriously known for its intense summer heat, nearly 30 million trees had been planted since 1949. The treed areas in the city were increased from 1,900 hectares to 6,103 hectares.[111] In addition, public parks, outdoor recreation space and other recreational facilities had also been considerably expanded. In Shanghai public parks underwent very rapid increase, both in area and in number, within the seven years after liberation. In 1949 the city had fourteen parks occupying a total area of 988.2 mou. From 1868, when the first park was established, to 1949 the annual increase of park area was only 11.8 mou, whereas between 1949 and 1957, park space increased to 2,993.5 mou, representing an average annual increase of 250.7 mou. On a per capita basis the area of public parks increased from 0.12 square metre to nearly 0.33 square metre during

the period.[112] Most of these parks were developed at the urban fringe and workers' housing estates outside the existing built-up areas.

The amount of open space[113] allocated to each inhabitant in new industrial cities, and workers' housing estates at existing urban centres generally ranged from 10 to 12 square metres. It was a standard used by Soviet planners for cities located in regions of mixed forests, broadleaf-deciduous forests and treed steppes in Central Russia, and with a population ranging from 50,000 to 500,000 (see Table 5.4). For China such a standard for open space in cities is exceedingly generous and unrealistic. It compared favourably with the island state of Singapore which recorded in 1967 only 0.5 acre per thousand population (2 square metres per person) for the island as a whole and 0.3 of an acre per thousand population (1.2 square metres per person) for the Singapore city area. It had been the hope of Singapore's planners to achieve a long term standard of 1.5 acres per one thousand population (4.5 square metres per person).[114] The adoption of a standard of 10 square metres per person for open space by Chinese planners would no doubt exert an impact on land consumption. In a city with one million population, for example, over 4 square miles of land must be set aside for this type of land use. Often, because of scarcity of land for large parks within the built-up areas of cities, it became a general practice to convert large amounts of suburban agricultural land for recreational purposes. Further, as the total area of planned open space in cities was based

TABLE 5.4 Soviet Standard for Public Green Area

(no. of square metres per person)

Region No.	Climatic Landscape Region	City Pop.('000) 5	5-20	20-50
II	Coniferous forests of European Russia and coastal areas of the Baltic Sea. Mixed forests and broadleaf-deciduous forests of the Amur River region and coastal areas of Eastern Siberia	6	8	10
III	Mixed forests, broadleaf-deciduous forests and treed steppes of Central Russia	8	10	12
IV	Steppes	10	12	15

Note: In permafrost area and forested permafrost area (Region I) desert and semi-desert (Region no.V) and in mountainous areas (including Caucasus and coastal area of southern Armenia) allocation of green area will be determined by local conditions (climate, topography and irrigation practice).

Source:

Chien Hsi-fu (Urban Planning Institute), "On the Three Problems of the Green Area System", HHPYK, no.7, 1957, p.13. Quoted Second Section of Second Chapter "Problems on Determining (Size of) Green Area in Cities", in: Green Areas in Soviet Cities, 1954, p.22.

upon the projected population which was generally over estimated by urban planners,[115] urban fringe land was often excessively expropriated.

Other Problems in City Planning and Building

It was very obvious that China's initial strategy in urban development was to emulate the Soviet pattern,

which emphasized building of metropolitan cities to co-ordinate with large-scale nodal industrialization. Municipal authorities of cities where urban reconstruction was to take place were instructed by the central government to make necessary preparations for both short term and long term urban development,[116] with specific reference to spatial expansion:

> Urban construction is a matter of long term planning, and the scope of possible urban development must be examined in the light of the nation's plan for industrial development ... a unified plan must be formulated in order to fulfil current requirements while, simultaneously, to assure future needs... Appropriate amount of land should be set aside to meet developmental needs in the distant future.[117]

Like other important policy decisions relating to city building and suburban development, such as the Suburban Agrarian Reform Law and the Regulations on Land Expropriation promulgated in 1950 and 1953 respectively, the general principles of this directive was sound, but it failed to provide the important details, for setting any limit for the planned territorial extent of the developing urban centres. Subsequently, this aggravated the problem of urban sprawl in many Chinese cities.

Basically, orderly spatial expansion of cities depends on not only an adequate supply of land at the urban fringe, providing physical sites for construction, but also on sound urban plans, supplemented by effective land use control. In China, although land was made available for municipal and industrial developments around existing cities since 1950, no blue prints, zoning regulations and building codes were in existence when construction of a large number of workers' new villages was hurriedly started in the

nation's suburban areas in 1952, or after initiation of large scale industrial construction since the launching of the First Five Year Plan a year after. Thus, individual construction units of government departments, municipalities and state enterprises freely built on whatever site they desired. Department stores, cinema houses, municipal offices and other public buildings were erected at sites where there were very few or no residents, as those areas had been designated for future development.[118] Because of absence of urban data and shortage of manpower in urban planning, preliminary plans for large cities generally required several years to prepare. The urban plan for Paoki, a city with a projected population of two hundred and fifty thousand, could not be completed even after the city's planning personnel had spent over two and a half years or 7,100 man-days. This was by no means an isolated example.[119] Hence, in many cities the municipal authorities had already proceeded with housing construction before urban plans were ready,[120] a phenomenon not dissimilar to that occurred in Moscow's satellite town or Kryukovo in the late 1950s, which has been discussed earlier.

Two related factors further contributed to the disorderly expansion of cities in China: the eagerness of municipal officials to open new parks and construct large public buildings to demonstrate progress,[121] and by the prevailing idealism and ambition of urban planners to build large modern socialist cities. Many cities were conceived in their plans as having an initial population of more than one million and an areal extent of several hundred square kilometres. In order to build industrial

metropolis in future, municipal authorities of many cities acquired and reserved vast territory at the urban fringe for long term development, since land expropriation for such a purpose had already been endorsed by the state. Available evidence indicated that the amount of land acquired by cities for long term use exceeded that actually needed. The municipal officials of Paoting, a city with an existing built-up area of nearly twelve square kilometres, expropriated and retained such a large amount of land that the city would never need. Eventually, they had no idea what to do with the land acquired. According to the preliminary plan of the city, the built-up area would expand towards Tiehhsi (literally meaning west of the railway; the present city was located to the east of the Peking-Hankow Railway in Hopeh). The total area of the "chi-hua ch'ü" (planned district) occupied almost 14 square kilometres. The area reserved for the synthetic fibre factory, the textile factory and the thermal power plant was only about two square kilometres. Even if the battery factory, machinery factory and others to be constructed in future were to be located within the planned district, the total amount of land required would only be about three square kilometres, an equivalent of less than 20 per cent of the land designated for long term use. In other words, over 80 per cent, or nearly 11 square kilometres of the expropriated land needed to be filled by non-industrial developments such as provincial and municipal offices and schools, which was absolutely impossible.[122] It was a commonplace practice that not only vast suburban territories were designated for future development, but municipal construction

and factories or even housing estates were also built sporadically over these areas, far away from existing urban centres. Such chaotic and dispersed patterns of development emerged in the suburban areas of many cities in the interior. Sian offered a good example. The majority of factories in this new industrial city scattered outside the existing built-up areas, because the building sites for these factories had been randomly selected within the territory to be used for long term development. The "textile city" of Sian was located at the bank of Chen Ho, about 8 kilometres from the city, and over 20 large state enterprises scattered over the northern and the western suburban areas. As a result, new construction dispersed in all directions within a radius of ranging from 20 to 30 kilometres from the city.[123] The newly constructed industrial districts of Hsiku and Antingpao were located at over 20 kilometres from the city centre of Lanchow, and the industrial enterprises of Paot'ou and Taiyüan also over 10 kilometres from the urban area.[124] It should be mentioned that these were not self-contained settlements like satellite industrial communities that possessed at least the basic amenities. The sprawling urban developments had not been confined only to key-point cities which have just been mentioned, they were also rife in the urban fringe areas of cities not specified for active industrial growth at the beginning of the First Five Year Plan period. A Polish delegation of architects and urban planners noted such phenomenon while touring China. According to opinion on all the six cities visited, including Peking, Fushun,

Anshan, Hangchow, Soochow and Nanking, the problem was particularly serious in the city of Nanking. With the exception of the suburban areas to the south where the terrain conditions were unfavourable for urban use, new construction scattered throughout the northern, eastern and western suburbs, although there was still ample empty space within the urban limits that could have been used for construction.[125] These descriptions of and comments on sprawling cities were most widely publicized in official media throughout 1957. They reflected the persistence and seriousness of the problem that had already emerged soon after the nation-wide urban reconstruction began. There is evidence to substantiate such a claim. As early as 1954, excessive land expropriation by city authorities, absence of effective land use control measures, and ostentatious attitude of municipal officials and planning personnel were disclosed and criticized in an official publication:

> ...(The municipal officials) blindly expanded the urban area, and (the city planners) always wanted to make plans to build large cities with several million population and covered an area of several hundred square kilometres, and thus stretched the built-up area too extensive and too wide. When drawing up city plans, some cities were only enthusiastic in carrying out the long term plan, but neglected the current plan. (They) did not first develop the areas near cities and gradually spread to those farther away, from inside of cities to outside, but always proceeded with construction on land to be used for long term development. Many buildings and empty construction sites scattered everywhere and appeared in isolation in the suburban areas ... and because the urban areas were expanding too fast and unnecessarily, large amounts of farmland had been expropriated... At present (early 1954) some departments proceeded with large scale construction work at places very far away from cities, and large pieces of idle land separating existing built-up areas and construction

> sites. These sprawling developments did not only lead to land squandering and waste of construction expenses, but also impaired the entirety of urban development.

In suggesting possible solutions, the document exposed the roots of the problems.

> In order that cities use land rationally, municipal construction departments should formulate regulations on the use of urban land, and exercise necessary control (over the use of land). It was particularly important that the construction units must set out from reality, rationally calculate the amount of land (required by) the enterprises in accordance with the need of the construction projects. (We must) prevent dispersionism[126] and departmentalism[127] that have led to neglect of the entirety of city building. (We must) oppose to acquiring land excessively, to expropriate land at one's will and to proceed with construction without official permission.[128]

Remedial Measures

When the First Plan period was approaching the end, the central administration fully appreciated the weaknesses in the sector of urban planning and development. It also realized the serious impact of urban sprawl on the suburban agricultural land resources. To rectify the grave situation, several measures were instituted since April 1957.

Following the directive issued at a meeting of the Central Committee of the CCP held on 27 April, a rectification campaign[129] (cheng-feng yün-tung) was officially launched on 1 May. The primary objective of this nationwide movement was to eradicate bureaucratism, departmentalism and dispersionism that prevailed among personnel engaged in urban planning and municipal construction work.[130] At the end of May, the National Planning Work Conference

was held in Peking, following Li Fu-ch'un and Po I-po's return to the capital from their inspection tour in central-west China. The conference was jointly convened by the State Construction Commission, the State Planning Commission and State Economic Commission. Over 900 delegates participated in this important meeting, including all the renowned architects, senior administrative cadres from various branches of the Department of Economic Construction of the central administration, and the heads and chief engineers of more than one hundred planning and designing institutes across the nation. The main theme of the nine-day conference centred on reviewing the problems of land squandering and errors committed in urban planning and construction work during the past five years, and to plot strategies to avoid repeating similar mistakes in the Second Five Year Plan period that was about to begin.[131]

In the same month the People's Daily published an editorial entitled: "Urban Construction Work must conform to the Principle of Frugality", severely attacking the wrong attitude and thinking of urban planners who designed and built cities without taking into consideration the "real conditions" of the country:

> In the past some comrades engaged in city planning work seldom reckoned with the current economic level and other existing conditions in the country ... Our nation is populous and economically backward... Because of the large population and the scarcity of land, a lower standard for dwelling space and living space should be adopted, and land should be used economically... but in urban construction work some comrades blindly seeked for grandiosity and modernity, leading to unnecessary waste (of land and capital)... Some other comrades placed too much emphasis on development for the future. Contemplating to build, once and for all, ideal large socialist cities by the end of the decade, (the urban planners) unduly pursued after

> "grand scale" and "high standard". Undoubtedly, in urban planning and construction, appropriate consideration should be given to future development of cities, but it is more important to set out in accordance with reality, and to carry out planning and construction work to suit present conditions.[132]

On a more mundane level, the State Construction Commission and the State Urban Construction Department jointly prescribed a set of urban space utilization standards on 31 January 1958, for urban planning purpose in the Second Plan period. The standard for living space per capita in cities was drastically cut back from 76 square metres to within the range from only 18 to 28 square metres. For dwelling space it was reduced to less than 4 square metres per person. For the first time, specifications were provided for a proportion of residential areas in cities to be occupied by dwellings ranging from one to four storeys: about 50 per cent, over 35 per cent, over 30 per cent and over 25 per cent for one, two, three and four storeyed dwellings respectively.[133] Not surprisingly, even the standards to be adopted for long term (10 to 15 years) urban planning were well below those used in key-point cities during the First Five Year Plan period. For dwelling space each urban resident was to be allotted less than 5 square metres, for living space less than 35 square metres.[134]

Apart from reducing substantially the amount of dwelling and living space to be allocated to each city inhabitant, other means to augment the intensity of use of land were simultaneously adopted within the built-up areas of cities and the agricultural hinterland of the municipalities. In many large urban centres additional structures (usually one or two storeys) were added to existing buildings

for residential purposes; apartments, living quarters in workers' villages and other single or two storeyed dwellings. From 1958 to 1961, by means of this method alone, the amount of dwelling space in urban Shanghai was subsequently increased by at least 114,000 square metres.[135] In April 1958, the authorities launched a drive, calling upon members of suburban agricultural co-operatives to use land more intensively by expanding the acreage of multi-cropping and interplanting fields, and to use all empty fragmentary land, known as "shih-pien" (ten margins) land. These referred to unused strips of land lying at the edge of a field, a road, a fish pond, a grave, a wood, a river, a ditch, a fence, in front of a house, and behind a house.[136] Many communes in suburban Shanghai responded to the drive and mobilized members to utilize all "shih-pien" land for growing economic crops, small grains and vegetables. According to a preliminary survey conducted early in 1959, at Chuansha County, a suburban county of Shanghai, over 90 per cent of the fragmentary land in the county had been used for producing agricultural crops: 2,527 mou of maize, 2,502 mou of yams, 56 mou of beans, 36 mou of hemp, 216 mou of peanuts, 244 mou of sesame seeds, 727 mou of mixed grains, and 1,937 mou of vegetables. It was claimed that the use of "shih-pien" land increased not only the intensity of land use, but also income of the members.[137] Throughout the months of May and June 1959, articles and news reports on the use of "shih-pien" land in suburban communes appeared almost daily in the Shanghai presses.

The total acreage of fragmentary land in suburban

areas utilized for crop production, as exemplified by Chuansha County in suburban Shanghai, may not have contributed to a significant increase in the amount of cultivated land in China. Nevertheless, the drive reflected the serious impact of urban sprawl upon suburban agricultural land resources, which motivated the authorities to explore every possible avenue to compensate for the cultivated land lost, either justifiably or otherwise, since the advent of intense industrialization. To cope with similar problems, a spatial framework for regional planning involving reorganization of agricultural land use and dispersion of urban population and functions from large industrial cities to small settlements in their surrounding areas, was introduced in 1958. The effectiveness of these urban centred planning units as a means to curtail urban sprawl and reinstitute the traditional suburban market gardens at the actively expanding cities will be examined and evaluated in the following chapters.

CHAPTER 5 - NOTES

1. Creel, H.G., The Birth of China, (London: Peter Owen, 1958), p.68.

2. There are maps showing sites of ancient Chinese cities in various Chinese archaeological journals. See: Issues of Wen-wu (Cultural Relics), Kao-ku (Archaeology), and Kao-ku hsüeh-pao (Journal of Archaeology) published in the People's Republic of China in the 1960s.

3. Joseph Needham classifies "feng-shui" or geomancy as a pseudo-science of traditional China, which has a strong affinity to other Chinese sceptical traditions of ancient origin, including divination,astrology, chronomancy, physiognomy and cheiromancy. The practice of "feng-shui" involves examination and interpretation of the spatial and morphological expressions of the "chi", or cosmic breath of local hills and water bodies, and the temporal modification of this natural current by the position of heavenly bodies. Needham, J., Science and Civilization in China, volume 2: History of Scientific Thought, (Cambridge: Cambridge University Press, 1956), p.346.

   Incidentally, there was a parallel belief in Chinese traditional medicine which was based on the concept that man was a microcosmic image of the universe and subjected to identical laws. It was believed by the ancient Chinese that in the human body there existed the vital essence called "chi", consisting of a harmonious mixture of "yin" and "yang". Ailments were caused by upsetting of the equilibrium of these components of "chi" in the body. See: Tan, L.T., M.Y.C. Tan, and I. Veith, Acupuncture Therapy and Current Chinese Practice, (Philadelphia: Temple University Press, 1973), p.3.

   For other works on "Feng-shui", see:

   Eitel, E.J., Feng Shui, or the Rudiments of Natural Science in China, (Hong Kong: Lane Crawford & Co., 1873);

   Feuchtwang, Stephan, D.R., An Anthropological Analysis of Chinese Geomancy, (Vientiane: Editions Vithagna, 1974). This book analyses systematically each of the terms of reference and the principal systems implied in the interpretation of a landscape in geomantic terms.

4. Quoted in: Granet, M., Chinese Civilization, (Paris: Albin Michel, 1968), p.237.

5. Osvald, S., (1924), op.cit., p.28.

6. These characteristic outlines of traditional Chinese cities may be seen in many fang-chih (local gazetteer) of China, or Shina johaku no gaiyo (An Essence of

Chinese Cities), op.cit., various pages, (in Japanese).

7. Wheatley wrote that cosmic symbolism was also involved in the planning of ancient cities such as Ankor Thom, and Burmese ancient capitals of Pagan, Amarapura, Ava and Mandalay. In Wheatley, P., "What the Greatness of A City is said to be", Pacific Viewpoint, 1963, p.179.

   Wheatley also discusses the cosmology of Ancient Chinese cities in his works: The Pivot of the Four Quarters: A Preliminary Enquiry into the Origin and Character of the Ancient Chinese City, op.cit.

8. Needham, J., Science and Civilization in China, volume 4: Physics and Physical Technology, Part 1 - Physics, (Cambridge: Cambridge University Press, 1962), p.73.

9. Gernet, Jacques, Ancient China: From the Beginning to the Empire, (London: Faber and Faber, 1968), p.53.

10. Many contemporary North American cities also display this grid-iron pattern, but it mainly serves to facilitate location of specific places within the urban area.

11. Kao-ku (Archaeology), no.10, 1959, p.536.

12. Needham, vol.4, op.cit., p.312.

13. Ibid., p.313. For the city plan of Kaifeng, see: Herrmann, A., Historical and Commercial Atlas of China, (Cambridge, Massachusetts: Harvard University Press, 1935), p.48.

14. Kao-kung chi is the last section of Chou-li or Chou-kuan.

15. Ch'angan of the T'ang dynasty had an area of 36 square miles which far exceeded this specification. It was by far the largest walled city in ancient China. Wen-shih (History of Culture), no.3, 1963, p.157.

16. Mote, F.W., "The Transformation of Nanking", in: Skinner, W.G.,(ed.), The City in Late Imperial China, (Stanford: Stanford University Press, 1977), p.113.

17. Ho Ping-ti, "Lo-yang, A.D. 495-534: A Study of Physical and Socio-economic Planning of a Metropolitan Area", Harvard Journel of Asiatic Studies, vol.26, 1966, pp. 78-79.

18. Gernet, J., op.cit., p.27.

19. For the detailed study of the evolution of the planning of Peking from the Yüan dynasty to the present, see: Hou Jen-chih, (1973), op.cit., pp.2-23.

20. Lamley, H.T., "The Formation of Cities: Initiative and Motivation in Building Three Walled Cities in Taiwan",

in: Skinner, G.W. (ed.), op.cit., p.165.

21. Ibid., p.171.

22. Chang Kwang-chih, The Archaeology of Ancient China, (New Haven: Yale University Press, 1963), p.157.

23. Creel, op.cit., p.68.

24. Chang, op.cit., p.194.

25. The archaeological team of the Hopeh Bureau of Culture, "Reconnaissance and Trial Excavations on the Site of Yen Hsia Tu (Lower Capital of the State of Yen) at Yihsien, Hopeh", Kao-ku hsueh-pao (Journal of Archaeology), no.1, 1965, pp.83-106.

26. This concept of a separate palace unit was widely adopted by many later dynasties, e.g., the palace complexes of Ch'angan and Loyang, the capitals of T'ang dynasty, were well integrated and completely isolated from the rest of the city; same as the palace unit in Peking, capitals of the Yüan, Ming and Ch'ing dynasties.

27. Kuan Li, "Essence of the Investigation of Lin Tzu - capital of Ch'i", Wen-wu (Cultural Relics), no.5, 1972, pp.45-54.

28. Tuan, Y.F., China, (London, Longman: 1970), p.108.

29. Kato, S., Studies in Chinese Economic History, vol.1, (Tokyo: 1952), p.327.

30. Ho, op.cit., pp.71-84.

31. Gernet, J., op.cit., pp.32-33.

32. Leeming, Frank, (1970), op.cit., pp.316-321.

33. Both the medieval cities of Heian-kyo (Nara) and Heijo-kyo (Kyoto) were built in 710 A.D. and 794 A.D. respectively, on plans imported from China during the T'ang dynasty by Japanese scholars. See Kornhauser, David, Urban Japan: Its Foundation and Growth, (London: Longman, 1976), p.148.

34. Ibid.

35. For details of these modernization schemes, see: Sun Chung-shan hsuan-chi (Selection from the Writings, Letters and Speeches of Sun Yat-sen (Two parts), Part 1, op. cit., pp.186-342.

36. Jaffe, P., Commentary and Notes on Chiang Kai-shek's China's Destiny and Chinese Economic Theory, (London: Unwin and Allen, 1947), p.322.

37. Chiang Kai-shek, China's Destiny, (Authorized translation by Wang Chung-hui), (New York: The MacMillan Co., 1947), p.113.

38. Jaffe, op.cit., pp.315-316.

39. Among the literature on contemporary urban development the better known ones include:

    a. Wu Shan, et al., (compilers), Shih-cheng ch'uan-shu (Handbook of Local Government), (Shanghai: Tao-lü yüeh-kan ch'u-pan-she,1929).

    b. Ch'en Yen-lin, Shang-hai ti-ch'an ta-ch'uan (Comrehensive Account of Real Estate and Property in Shanghai including the Concessions), op.cit.

40. Spencer, J.E., "Changing Chungking: the Rebuilding of an Old Chinese City", The Geographical Review, vol.29, no.2, 1939, p.53.

41. Wu, op.cit., p.32.

42. Ibid., p.10.

43. Lan Tien, "Urban Construction Should be Undertaken in Accordance with the Principle of Economy, Utility and Aesthetics", Hsin-hua yüeh-pao (New China Monthly), no.2, 1954, p.140; hereafter: HHYP.

44. The characteristics of traditional Chinese cities bear very close similarities to those of the "pre-industrial city" described by Sjoberg. According to him, cities of this type have not arisen from that form of production which associate with the European industrial revolution. Further, the internal arrangement of the pre-industrial city is closely related to the city's economic and social structure. Most streets are mere passage ways for people and for animals used in transport. Buildings are low and crowded together, and have fostered serious sanitation problems.

    Sjoberg, Gideon, "The Pre-industrial City", The American Journal of Sociology, vol.60, 1954-55, pp.439-440.

45. Hou Jen-chih, "Reviewing the Struggle between Confucian and Legalist Schools from Ancient Chinese City Construction", Chien-chu hsüeh-pao (Journal of Architecture), no.3, 1975, pp.34-37; hereafter: CCHP.

    A similar view was expressed in another article published in the April issue of the same journal: Wu Liang-jon, "Struggle between the Confucian and Legalist Schools on the Problems of Urban Planning", CCHP, no.4, 1975, pp.38-42.

46. Hsu Shih-ping (vice-minister of building), "Building Boom in China's Cities", Peking Review, 15 December 1959, p.16.

47. Mao Tse-tung, "On the Ten Great Relationships", 25 April 1956. In: Schram, S. (ed.), Mao Tse-tung Unrehearsed - Talks and Letters: 1956-1971 (translated by John Chunery and Teiyun), (Harmondsworth, Penguin Books, 1974), p.83.

48. Definition of capital construction (or basic construction) according to Article 1 of the Provisional Regulations for Basic Construction Work, promulgated by the Finance and Economic Commission of the GAC on 9 January 1952, it is a term of Soviet origin, relating to all work involving expansion, construction, rebuilding and rehabilitation of fixed assets. These include construction of new enterprises, expansion, reconstruction and rehabilitation of existing enterprises... construction of factories, bridges, roads is capital construction. Investigation, survey and design involved in housing construction, building of bridges and roads, together with scientific research work are also capital construction.

Chieh-fang jih-pao (Liberation Daily), Shanghai, 14 February 1952; hereafter CFJP.

49. Ku Ming, "City Construction Should Be Intimately Coordinated with Industrial Construction", Tung-peh jih-pao (Northeast Daily), Shenyang, 19 December 1952.

The article was repeated in the February issue of Hsin-hua yüeh-pao (New China Monthly), 1953, op.cit.,pp. 120-121.

50. "Improve and Strengthen Urban Construction Work", Jen-min jih-pao (People's Daily), (editorial), 22 November 1953; hereafter: JMJP.

51. Jen-min shou-t'se (People's Handbook), 1955, p.248; hereafter: JMST.

52. Ch'eng-shih chien-she (Urban Construction), no.1, 1957, p.7; hereafter CSCS.

53. Wen-hui pao (The Cultural Contact Daily), Shanghai, 10 February 1954; hereafter: WHP.

54. Chung-ch'ing jih-pao (Chungking Daily), Chungking, 6 March 1950.

55. Wang Wen-ke, "Campaign Against Waste and Conservatism, Energetically Improve Urban Planning, Construction and Administration Work", CCHP, no.4, 1958, p.1.

56. Ch'ing Hsin, "Rapidly Developing Urban Construction in China", CSCS, no.10, 14 October 1959, p.13.

57. Yang Ching-wen, "Two Problems in Industrial Distribution", Chi-hua ching-chi (Planned Economy), no.8, 1957, p.13; hereafter: CHCC.

58. CSCS, no.10, 1957, p.11.

59. Baranov, N., "The City of the Future is Built Today", Izvestia, 14 June 1961, vol.13, no.20, p.15.

60. The common practice of building these single-storey private homes and "dacha" (summer cottages) was criticized by K. Ivanov, Director of the Institute of the Theory and History of Architecture and Construction Technology and two other members of the Institute. In their view the individual little house with a yard did not conform to the tenets of Marx, Engels and Lenin, who advocated that true communists had always protested "against plans to provide the workers with a piece of land or private cottage."

    Ivanov, K., Director of the Institute of the Theory and History of Architecture and Construction Technology, and A. Peremyslov and A. Ryabushin, scientific staff members of the Institute, "Are Such Houses Necessary?" Izvestia, 6 July 1960, p.3. Condensed text in Current Digest of Soviet Press, vol.13, no.27, 15 March 1961, pp.22-24.

61. Kucherenko, V.A., "On the State of Urban Development in the U.S.S.R. and Measures for Improving It", Pravda, 8 June 1960, pp.2;3; Izvestia, pp.3-4. Translated in Current Digest of Soviet Press, vol.12, no.23, 1 July 1960, p.16.

62. Ibid., p.17.

63. Kucherenko, V.A., "The Future of Our Cities", Pravda, 29 October 1959. Translated in Current Digest of Soviet Press, vol.12, no.22, 29 June 1960, p.23.

64. Ivanov, K., et al., op.cit., p.3.

65. Kucherenko, 29 June 1960, op.cit., p.23.

66. Kucherenko, 8 June 1960, op.cit., p.3.

67. Nikolayev, I., (member of the U.S.S.R. Academy on Construction and Architecture), "Industry and the City Discussing Problems of Urban Development", Izvestia, 4 May 1960, p.4. Full text in Current Digest of Soviet Press, vol.12, no.18, 1 June 1960, pp.37-38.

68. Kucherenko, 8 June 1960, op.cit., p.17.

69. Kucherenko, 29 June 1959, op.cit., p.24.

70. Osborn, R.J. and T.A. Reimer, "Soviet City Planning: Current Issues and Future Perspectives", American Institute of Planner Journal, vol.28, 1962, p.242.

71. According to Article 4 of the Provisional Regulations for Basic Construction Work promulgated by the order

of the Finance and Economic Commission (FEC) of the Government Administrative Council (GAC) on 9 January 1952, all construction projects shall be divided into two main types: "above norm" and "below norm". The norm values shall be determined by the FEC of the GAC, in accordance with the varied conditions of different kinds of enterprises, which are attached herewith.

For construction projects which total investment exceeds the norm value, shall be "above norm" projects, whereas those which total investment is below the norm value, shall be "below norm" projects. However, individual construction projects of an important nature, if specified by the FEC, shall be "above norm" projects irrespective of the total amount of investment.

All "above norm" construction projects which total investment exceeds or equals one thousand billion yüan, shall be called type"A" construction projects, and those which total investment is less than one thousand billion yüan, shall be called type "B" construction projects.

All "below norm" construction projects which total investment exceeds or equals twenty billion yüan, shall be called type "C" construction projects, and those which total investment is less than twenty billion yüan, shall be called type "D" construction projects.

Source: 1953 JMST (1953 People's Handbook),(Peking: Ta-kung pao-she, 1953), pp.73-74.

72. Tso Yen-hsing, "To Arrange Urban Construction Work in accordance with the Principle of Thrift and Diligence", CHCC, no.12, 1957, op.cit., p.5.

73. Yang, op.cit., p.15.

74. Fisher, J.C., City and Regional Planning in Poland, (Ithaca, New York: Cornell University Press, 1966), p. 261.

Also: Bencze, Imre and Tajti, E.V., Budapest: An Industrial-Geographical Approach (Budapest: Akademiai Kiado, 1972).

75. Wang, op.cit., p.3.

76. Ibid., p.3.

77. Ibid., p.4.

78. Tang Chien-yun, "On the Planning of City Centres", CSCS, no.12, 1958, p.22.

79. Tsao, op.cit., p.5.

80. Wang, op.cit., p.4.

81. Sit, Victor, (Panel discussant) commented on the paper entitled "Land Use Transformation in Suburban China since 1949", presented by this writer at the Fifth Leverhulme Conference on China, 17 December 1977. The Conference was sponsored by the Centre of Asian Studies, University of Hong Kong.

82. Shang-hai nien-chien 1948 (Shanghai Yearbook 1948), Section B, (Shanghai: Shanghai Gazetteer Office, 1948), p.8.

83. Chao Ting-kam, "Shan-ch'eng Chung-ch'ing" (The Hilly City of Chungking), Ti-li chih-shih (Geographical Knowledge), March 1958, p.103.

84. Li Fu-ch'un ,"Report at the Conference on National Design Work", CSCS, no.8, 1957, p.8.

85. JMJP, 26 July 1957.

86. Editorial: "Reduce the (Space Utilization) Standard for Buildings", CSCS, no.6, 1957, op.cit., p.12.

87. Editorial: "Learn the Ability to Build Cities through Diligence and Frugality on the Foundation of Seriously undertaking Rectification", CSCS, no.7, 1957, p.2.

88. Delegation of Polish Architects and Urban Planners to China, "Some Suggestions on the Urban Planning, Architecture and Training in Construction in China", CCHP, no.1, 1956, p.102.

89. Hopkins, K., "Public and Private Housing in Hong Kong", in: Dwyer, D.J.(ed.), The City As A Centre of Change in Asia (Hong Kong: Hong Kong University Press, 1972), p. 200.

90. Dwyer, D.J., "Attitude Towards Spontaneous Settlement in Third World Cities", in: Dwyer, D.J. (ed.), ibid., p.175.

91. Hopkins, op.cit., p.213.

92. Construction of 9 workers' villages in Shanghai began in 1952. These housing estates occupied a total area of over 4,000 mou (over 660 acres), and were located at the fringe areas of the city, at close proximity to existing industrial areas within the urban built-up areas. By 1959, 34 housing estates of comparable scale for workers and their families were built, which accommodated over a total number of 600,000 persons.

    Hsu Shih-ping (vice-minister of Construction Engineering), "Urban Construction in China During the Last Decade", CSCS, no.10, October 1959, p.1.

93. Calculated from Table showing Shanghai's population and area, 1948 Shanghai Yearbook, op.cit., p.8.

94. The state's prescribed standard for dwelling space during the Plan period was 4 square metres per person. CSCS, no.6, 1957, op.cit., p.12.

    It appeared that the standard for dwelling space used by Shanghai's urban planners for this first housing project was quite close to the state's prescribed standard.

95. According to the specifications, there were then 262,410 square metres of public buildings, including primary schools, nurseries, kintergartens, secondary schools, clinics, public baths, and also other buildings within the estate, such as office of the Bureau of Housing and Land, bank, post office, cultural palace, dining-hall, Public Security Office, health centre and cinema.

    Wang Ting-tsang, "Planning and Design of the Residential District of Tsao-yang New Village in Shanghai", CCHP, no.2, 1956, p.1.

96. Wang, ibid., p.1.

97. Hopkins, op.cit., p.213.

98. The 76 square metres of living space per person included 33 square metres for communal uses, 12 square metres for public buildings, 12 square metres for public open space or parks, and 19 square metres for roads and municipal squares.

    CSCS, no.6, 1957, op.cit., p.2.

99. Wu, op.cit., p.10.

100. Pan Tse-yun, "On the Standard for Dwelling Space and the Schedule for Urban Planning of Our Nation", CSCS, no.8, 1957, p.21.

101. Keizai Kikaku-cho, Kokumin Seikatsu Hakusho (Economic Planning Agency: White Paper on People's Living Conditions),(Tokyo: Keizai Kikaku-cho, 1972),p.72.

102. Stephen, H.K. Yeh and Y.S. Lee, "Housing Conditions in Singapore", Malayan Economic Review, vol.13, no.1, April 1968, p.12.

103. Champion, A.G., "Agriculture and New Towns in Great Britain", Geographia Polonica, no.24, 1972, p.131.

    Note: For individual new towns, land provisions range from as little as 37 acres p.t.p. to as much as 75 acres p.t.p. for the total urban area. (See Best, R.H., Land for New Towns, op.cit., p.47).

104. In Great Britain, it was over 1 acre (6 mou) per capita, whereas in China 2.5 mou per capita.

Champion, ibid., p.131.

Wang, 1958, op.cit., p.1.

105. JMJP (People's Daily), 8 May 1957.

106. Kung Tat-lun (Urban Construction Committee of Chungking), "An Introduction to the Plan for A Small Urban Area in the Hilly Region of Chungking", CCHP, no.10, 1958, p. 29.

107. WHP, Shanghai, 6 January 1957.

108. Ch'eng Hsi-fu, (Urban Planning Institute), "On the Three Problems of the Green Area System", Hsin-hua pan-yüeh-kan (New China Semi-monthly), no.7, 1957, p.13.

109. This was a common sight in all the fourteen cities visited by this writer during his travel of China in the summer of 1977.

110. Hsin-wen jih-pao (News Daily) Shanghai, 28 August 1957.

111. Scott, Ross, "Green Cities of China", Habitat, vol.4, no.1, March 1976, p.5.

112. CFJP, Shanghai, 11 August 1956.

113. In China open space in urban areas includes: cultural-recreational parks, district parks, small district gardens, boulevard gardens, tree-lined roads, suburban green areas, special purpose green areas, street green areas, neighbourhood green areas, sports stadiums and hygienic protection belts. Ch'eng, op.cit., p.13.

114. Chua, P.C., Planning in Singapore: Selected Aspects and Issues, (Singapore: Chopmen Enterprises, 1973), pp.71-73.

115. In 1955 the director of the Bureau of Urban Construction criticized the over-estimation of population in cities. See: Sun Ching-wen, "Strengthen the Work of Urban Construction to Meet the Need of Industrial Construction", JMST, 1955, p.247.

116. This was probably an emulation of the Soviet city planning model. The long term plans included municipal projects to be constructed within the next 10 to 15 years, whereas short term plans included developments to be completed within the next 5 years.

Wang, op.cit., 1958, p.6.

117. JMJP, 12 August 1954.

118. CSCS, no.7, 1957, op.cit., p.10.

119. Wang, op.cit., p.2.

120. Wang, op.cit., p.3.

121. Vogel, Ezra F., Canton Under Communism: Programs and Politics in a Provincial Capital 1949-1968, (Cambridge, Mass.: Harvard University Press, 1969), p.129.

122. Chou Hsu-yu, "Some Suggestions on the Preliminary Plan of Paoting", CSCS, op.cit., p.19.

123. Chen, 1957, op.cit., p.75.

124. Yun Cheng, "The Problem of Coordinating Among Municipal Construction, Residences and Service Facilities and Other Enterprises Under Construction in New Industrial Districts", CHCC, no.4, 1957, p.13.

125. CCHP, no.1, 1956, op.cit., p.103.

126. Dispersionism is antagonistic to the idea of unity and concentration, and is an erroneous concept which is injurious to the interest of the masses. It arises from the failure to see how essential unity and concentration are to state construction while all the advocating the equal deployment of forces and insisting on acting separately and individually, and in this manner committing the mistake of harming the overall interest. See: Ch'eng-shih chien-she ching-chi wen-ti (The Economic Problems in Urban Construction),(Peking: Jen-min ch'u-pan-she, 1956), p.76.

127. Departmentalism is an incorrect viewpoint which opposes the procedure of viewing a situation as a whole and what is harmful to the interests of the whole. It exists mainly because one only sees partial interest and one's part in a work, and fails to see the entire situation and other people's roles, all of which make up the whole work. Departmentalism is also referred to as the attitude of caring only for one's own interests to the exclusion of others, or of being concerned only for one's own part of the work at the expense of the entire work.

"We must oppose the tendency towards selfish departmentalism by which the interests of one's own unit are looked after to the exclusion of those of others".

Mao Tse-tung, Selected Works, vol.3, (Peking: Foreign Language Press, 1971), p.46.

128. Lan Tien, op.cit., p.140. Italics added.

129. This was the fourth rectification campaign ever launched since the founding the Chinese Communist Party, reflecting the seriousness of the problem of urban sprawl which the central government had to deal with near the end of the First Five Year Plan period.

The first rectification campaign took place on 8 February 1942 after Mao's speech entitled "Oppose Stereotyped Party Writing", criticising the "dogmatist tendencies and liberalist tendencies seriously prevented the implementation of the Party's correct lines and policies." This first campaign centred on "fighting subjectivism, sectarianism and stereotypes of the Party."

Source: JMJP, 29 July 1950.

The second rectification campaign was launched between 1947 and 1948. Party organizations of various liberated areas conducted an extensive rectification campaign in relation to the land reform movement.

Source: JMJP, ibid.

The third rectification was conducted throughout the Party in 1950. Its aim was to intensify the education of a large number of new Party members, change ideological impurities among them, overcome the arrogant and complacent attitudes that emerged from victory, as well as the coercive and authoritative style which appeared in the old Party members.

Source: JMJP, 13 June 1950.

130. JMJP, 8 May 1957.

131. JMJP, 7 June 1957.

132. JMJP, 27 May 1957.

133. "Notification concerning Several Controlling Guidelines for Urban Planning", Chung-hua jen-min kung-ho-kuo fa-kuei hui-pien, (Compendium of Laws and Ordinances of the People's Republic of China, January-June, 1958), (Peking: Fa-lü ch'u-pan-she, 1958), pp.181-182.

134. Ibid., p.182.

135. Lui Kwang-chi, and Tsu Ching-yu (Urban Planning Design Institute, Municipal Bureau of Urban Construction of Shanghai), "Problems concerning Structural Addition to Existing Dwellings in Shanghai", CCHP, no.11, 1962, p.5.

136. Hungch'i (Red Flag), no.5, 1958, p.40.

137. CFJP, Shanghai, 18 May 1959.

CHAPTER 6

SPATIAL CONSEQUENCES OF URBANIZATION: A NATIONAL OVERVIEW

Introduction

Spatial growth of cities involving the transformation of land use from rural to urban, has been closely associated with the urbanization experience of both developed and developing countries. In the urbanization process displacement of agriculture in urban fringe areas has become a commonplace phenomenon. Fast but often disorderly urban spatial growth has also brought about land speculation and consequent inflation in land prices, greatly exacerbating the difficulty of acquiring land for public use. This problem of land shortage for planned urban development is particularly acute in urban Japan. In many Third World countries in Southeast Asia, the Middle East and Latin America, a problem of a different nature has emerged. The urban fringe areas in these regions are characterized by the presence of squatter settlements erected by immigrants from the countryside. This illegal occupancy of urban fringe land has introduced confusion in land use and future planned growth of cities.

Among these adverse impacts of urban expansion, the permanent loss of valuable agricultural land resources as a result of uncontrolled expansion of urban territory constitutes a problem of global significance. A substantial amount of farmland in California where the most important horticultural zone in the United States is located,

has been occupied incessantly by building sites and highways. The irreplaceable Niagara Fruit Belt in Eastern Canada with its unique soil and climatic capability which permits it to produce high quality fruits is rapidly diminishing in size due to expanding urbanization. Much of the land under rubber outside Malaysia's emerging conurbations of Kuala Lumpur and Petaling Jaya are lying idle, awaiting urban occupancy. The first class farmland outside Adelaide and Sydney in Australia and Auckland in New Zealand are disappearing at an accelerating rate. Extensive areas of productive agricultural land outside Warsaw has not been spared from building activities of the post-war reconstruction programme of the city. In Japan, in the metropolitan Tokyo area alone, as much as nine hundred acres of rice-paddies and market gardens have been transferred to transportation, residential, commercial and industrial use every year. In Tehran, capital of Iran, large tracts of suburban land originally classified for grazing are being used for building purposes by land speculators and developers.[1] The Thirtieth Conference of the International Union for the Conservation of Nature and Natural Resources held in 1978 in Ashabad, southern Russia issued a warning, which stated that at the current rate of loss of productive land the world was expected to be deprived of a third of its arable land by the end of the century.[2]

Since the 1950s problems relating to rural-urban land use conversion around western cities has become a well researched topic in urban geography. The result of the enquiries is represented by a rich body of established facts

and observations together with several theories. Valuable contributions in this field have been made almost exclusively by western geographers and non-geographers. Among these include the works of D.L. Stamp (1950), D.J. Bogue (1956), C.D. Harris (1956), R.R. Krueger (1959), G.P. Wibberley (1959), A.D. Crerar (1962), J. Kostrowicki (1964), R.H. Best (1964)(1968), R.H. Best and J.T. Coppock (1962), E. Higbee (1961)(1967), M. Clawson (1971), A. Champion (1972), C.R. Bryant (1973), R.J.C. Munton (1974), and L.H. Russwurm (1977).[3] On the other hand, study of the spatial impact of urban sprawl on suburban agriculture in the People's Republic of China that experienced vigorous industrial urbanization during the 1950s has been given very scanty attention. The present chapter has two related objectives. First, it enquires into the problems manifested in the form of vegetable supply shortages in cities as a result of the rapid declining agricultural land base in suburban China. Secondly, it examines and analyses successive official schemes introduced to augment vegetable supply to urban markets, including the institution of urban centred spatial planning units- the city regions.

Impact of Urban Sprawl upon Suburban Agriculture

Before 1949 the location of market gardens in close proximity to the city walls had been traditional and universal in China. Throughout the centuries, due to the continuous heavy application of organic fertilizer in the form of night soil supplied by the city, the soils in the city's environs have maintained their high yielding

characteristics. Thorp noted from his personal observation that every large city and town in China was surrounded by an irregular ring of very fertile soils which were as black and rich as typical chernozems. These rings extended at least as far as a man might reach on foot and return in one day, and were usually concentrated just outside the city walls where vegetable gardeners used enormous amounts of natural manure. The continuous use of this form of fertilizer was responsible for sustaining high yields of fine quality vegetables destined for the urban market.[4] Trewartha also remarked that on the North China Plain one could often tell when one was approaching a city by the heavier and greener crops. Market gardens occupied much of the fertility ring around cities where black and rich chernozem-like soils prevailed.[5]

The early years of the First Five Year Plan period heralded a very dynamic change in the traditional suburban landscapes - large amounts of productive urban fringe farm land laid waste due to excessive and premature land expropriation. Industrial plants and workers' housing projects appeared in groups or in isolation in suburban areas previously occupied by green fields. Despite the lack of detailed aggregate national statistical data on the total amount of suburban farmland that was converted into non-agricultural use during the entire First Five Year Plan period, the scattered evidence available suggests that the scale of this conversion was considerable. A sample survey conducted in eight cities revealed that 77,451 mou (c. 12,900 acres) of vegetable fields in the suburban areas were absorbed by municipal and industrial construction in

the period 1953 to 1954.[6] A Shanghai newspaper reported that from 1954 to 1956 the population of Harbin, a key-point industrial city in the province of Heilungkiang, northwest China, increased from 1.21 million to 1.47 million, but the acreage of market gardens in the province was reduced from 4,980 hectares to 2,662 hectares.[7] This implies that over one-quarter of the original acreage of market gardens was encroached upon by the rapidly expanding built-up area of the city. The absorption of suburban farm land by urban expansion also prevailed in non-key-point cities. In the suburban area of Foochow, a coastal city facing Taiwan across the Formosa Strait, there were 7,040 hectares of land cultivated by 115,000 peasants at the time of suburban land reform in 1952. By 1956, 7 per cent of this arable land was converted into industrial and residential uses while the rural population increased by 25 per cent.[8] In January 1958 an official source revealed that at the end of the First Five Year Plan period, the total area expropriated for municipal and industrial uses in China amounted to over 20 million mou[9] (over 3 million acres). Even if 1952 is used as the base year when nation-wide construction of workers' housing project was initiated, the amount of suburban farmland changed over to non-agricultural use reached an average of over half a million acres per year. This amount surpassed by almost 10 times the annual loss of 60,000 acres in Great Britain during much of the 1930s,[10] a decade of rapid urban expansion in the British Isles. It also represents more than twice the annual loss of 219,800 acres of cropland in the United States between

1900 and 1954.[11]

A significant proportion of the expropriated land included high yielding suburban market gardens.[12] The loss of considerable areas of productive suburban farmland was a major factor leading to a sharp decline in the local production and supply of fresh vegetables to urban residents. Thus they became much more dependent on distant sources. In a technically advanced country, or one with an efficient transportation system, the sources of supply of perishable agricultural produce are not necessarily located near the market. Fresh vegetables and liquid milk may be shipped hundreds of miles from farms to national markets with minimum spoilage. In the United States, for example, large producing market gardens or truck farms are no longer common phenomena of the urban fringes.[13] Many suburban farms producing vegetables and other perishable produce for the city have long been displaced by premature subdivisions of land and land speculation. General decline of transportation costs within the total cost structure of agricultural operation has made it economically feasible to ship agricultural produce over long distance. To meet the demand of the megalopolis of the northeast and other large urban markets, long distance transport of farm produce that is subject to speedy decay has become a commonplace practice. Fresh vegetables are shipped from California to New York in trucks equipped with sealed chambers of nitrogen gas. Despite the four day journey, the vegetables arrive at the eastern market in such a fresh condition that they appear to have been on the road for

only twelve hours! Even fresh milk for bottling has been distributed by refrigerated trucks from Arkansas to both Florida and California.[14] Long distance transfer of agricultural produce that is also practised in Japan, a highly industrialized country with rapidly expanding cities. Because of rapid absorption of suburban farmlands by the sprawling city of Tokyo and the huge demand for fresh vegetables and other perishable farm produce by its ten million inhabitants, that city has to turn to distant market gardens for at least 20 per cent of its fresh vegetable needs. Fresh vegetables have been shipped by rail from northern Honshu and from as far as Hokkaido, the northernmost island of the Japanese archipelago. Apart from the seasonal attractiveness of prices at Tokyo, long distance shipment of these perishable commodities is practicable due to the highly efficient railway system in Japan.[15] In China, surplus vegetables produced in the subtropical south, especially in the delta region of the Pearl River, could in theory be diverted to urban centres in the interior and in northern China where there were shortages. However, because of the country's backwardness in modern technology and the poor transportation system, attempts to relieve vegetable shortages in many of the rapidly expanding large cities by means of long distant interprovincial transfer are likely to incur very high transportation costs, excessive amounts of spoilage and waste, and to place an extra burden on the railway system which has already been heavily used for moving industrial materials and food grains.

Official Efforts at Promoting Vegetable Production in Suburban China

Among the principle objectives of the Suburban Agrarian Reform Law promulgated in November 1950, one was aimed at the promotion of special type of suburban agriculture for providing subsidiary food for urban residents. It was not until 1953, however, that the central authorities placed an emphasis on local production of vegetables in designated suburban areas of cities, and stressed that importing of fresh vegetables from other provinces should be a last resort. An official notification was issued to urge suburban agriculture to serve the cities.[16] The Northeast Bureau and the Central-south Bureau of the Rural Work Department convened special meetings in mid-September 1953 and early January 1954 respectively. The main theme focussed on enquiries into the economy and characteristics of rural villages in suburban areas, vegetable supply from suburban market gardens, and formulation of production plans for suburban areas:

> From now on suburban agricultural production must serve the cities, and industrial and mining districts. Bearing in mind the flexibility and diversity of suburban agricultural production, all municipalities should not only engage in grain production, but should regard vegetable production, fruit tree planting, livestock and fowl raising and transportation development as the major objective of their agricultural activities.... All cities should pay attention to strengthening the leadership of suburban agricultural production, and expand the suburban areas in correspondence with the expanding cities. Plans for suburban agricultural production should be incorporated into the urban development plans, so that subsidiary food production would be in harmony with the need of the city. In this way, blind

> development of suburban production and interrupted supply (of subsidiary foods) could be avoided.[17]

This appeal, however, achieved only very limited success. First of all, during this period of vigorous industrial expansion, a large number of vegetable plots had been and were still being encroached upon by active capital construction in the city fringes, and large numbers of vegetable growers displaced. The beginning of the industrial programme brought about an increase in mobility of agricultural labour in areas located near cities. Many young farmers abandoned agricultural work to become factory workers or to participate in construction work in cities.[18] Further, many suburban farmers were reluctant to change to vegetable production from traditional crops or other agricultural practices, because the change would lead to a lower income due to the need for higher capital and labour input in vegetable production. It was found that only a lower yield of vegetables could be obtained from vegetable plots newly converted from traditional crop fields. Because of the actual decrease in vegetable acreage, many large cities in the north and in the interior experienced widespread shortages in vegetable supply, despite imports from the surplus areas in the south. According to the data collected in eleven large urban centres including Peking, Tientsin and Shanghai, the supply of vegetables could only meet 74 per cent of the demand in 1953.[19]

Late in 1953 when agricultural collectivization began in the rural areas, many of the agricultural co-operatives formed in the suburban areas of Peking, Shanghai, Anshan, Harbin, Ch'angch'un, Lüta, and Fushun were converted

into vegetable producing co-operatives, specializing in vegetable production for supplying the urban population.[20] In the suburban area of Peking, the number of vegetable producing co-operatives grew from 20 in late 1953 to 120 in 1954, an increase of 600 per cent within a very short period of time. Among the 229 agricultural co-operatives formed in Shanghai's suburban areas in the spring of 1954, 158 specialized in vegetable production.[21] These institutional changes in agriculture made possible the pooling together of farm labour, capital and land resources, thus enabling the vegetable co-operatives to solve the problems of shortage of capital and labour generally encountered by private vegetable producers or members of the mutual aid teams.

Even the non-vegetable producing co-operatives began to grow more vegetables. The agricultural co-operatives at Taihsing Township of Woosung District (a suburban district to the north of Shanghai city), located in the traditional rice and cotton growing area, grew over 150 mou (25 acres) of vegetables by reducing the area under rice by 67 mou (c.11 acres), and that under cotton by 92 mou (c.15 acres). The Chenchia Village agricultural co-operative in Chiangwan Suburban District, lying at the northern fringe of the city, converted all its agricultural land into market gardens.[22] The conversion was probably motivated by a greater financial reward from growing vegetables, there being a considerable difference in income between crop farmers and vegetable growers. In Shanghai's suburban districts, crop farmers received a maximum annual income of about eighty yüan from one mou of land that produced

two crops a year, whereas the annual income of vegetable growers reached as high as two hundred yüan from the same acreage. In 1954 the average income of members of co-operatives specialized in vegetable production was one yüan seventy fen per work-day, and members of Li Tse-yüan Agricultural Co-operative at Chenyü Suburban District (lying to the northwest fringe of Shanghai city), at best, earned a maximum of over 3 yüan per work-day, whereas the average income per work-day for co-operatives producing rice or cotton was only about one yüan and twenty fen.[23] Similar patterns of income differential may also be found in other parts of China. In the suburban areas of south China, the annual income per mou of market garden ranged from four hundred to five hundred yüan, as compared to that per mou of sugar cane, which ranged from eighty to ninety yüan.[24]

Apart from the financial incentives which encouraged grain farmers or cotton farmers in suburban areas to switch to vegetable production, several other efforts were expended by the authorities to promote self-sufficiency in the local supply of vegetables to large urban centres. A meeting was convened by the Rural Work Department of the central government from January 5 to 14, 1956. All the cadres who came from the major cities were urged to realize the significance of promoting vegetable production in suburban areas. All local party committees were also instructed to reserve specific areas in the city's environs as special vegetable producing districts.[25] In Shanghai the municipal financial committee established a municipal

subsidiary food supply committee. Its suburban office undertook the task of encouraging peasants to expand their vegetable acreage in order to increase the supply to urban Shanghai.[26] To alleviate the initial shortage of capital among potential vegetable growers, the People's Bank in Shanghai extended an agricultural loan of one hundred billion yüan (old currency) to the newly formed vegetable producing co-operatives.[27] In January and February of 1955, to provide continuous financial support for vegetable acreage expansion, the Bank released a second loan of over six hundred and twenty thousand yüan, (new currency) which exceeded the previous loan by ten times.[28] These new measures implemented by the authorities induced some changes in agricultural land use in suburban Shanghai. More cotton fields and cropland were converted into market gardens. In one year's time, the vegetable acreage in Shanghai's suburban areas increased from 100,000 mou to 124,000 mou.[29] As a consequence of the areal expansion of market gardens in the city's fringe areas, local production of vegetables in Shanghai increased to 82 per cent of total consumption.[30]

The initial success in achieving a higher degree of self-sufficiency in vegetable supply in cities, however, was short lived. In September 1955 the National Vegetable Corporation was established by the Department of Commerce, in accordance with a directive issued by the State Council. The stated objectives of the state commercial organization were to assume responsibility for the unified organization of trading in vegetables, as well as bean sprouts, bean

curd and bean starch vermicelli, and the planned vegetable production in order to guarantee vegetable supply in large and medium-sized cities, and in industrial and mining districts. Another responsibility of the organization included socialist reform of private vegetable merchants and vegetable pedlars.[31] Soon after the establishment of this state purchasing and marketing organisation, production of vegetables was seriously affected. The problem stemmed mainly from poor management of the corporation, and the inexperience of its personnel to market and to plan production of vegetables, an agricultural commodity highly affected by the seasons. To avoid possible financial loss, the general approach adopted by the Corporation was to keep the purchase price for vegetables as low as possible during the "high" season. Because no rational pricing policy had been formulated, prices offered to members of vegetable producing agricultural co-operatives was often well below their capital investment, and even deprived the members of any financial reward for their labour. For example, the Third Agricultural Co-operative at Pachou Hsiang (outside Canton) grew 200 mou (c.33 acres) of vegetables last winter. The members spent over 4,000 work-days producing the crop, but, upon selling the produce to the Corporation, incurred a financial loss of over 2,000 yüan.[32] In another instance, the excessive profits made by the National Vegetable Corporation was disclosed at a meeting of an agricultural co-operative outside Canton:

> In April the purchase price offered by the procurement unit of the NVC for string beans was four yüan per dan (110.23 pounds), but the sale price of the produce was seven yüan

> eighty fen. The organization made a profit of almost 100 per cent. Also, the unit bought in potatoes from an agricultural co-operative for six yüan per dan, but sold them to the People's Liberation Army for 13 yüan per dan. Although the market price for vegetables was not low, we peasants were not able to get a fair share at all.[33]

Therefore, because of the unreasonably low purchase price for vegetables set by the National Vegetable Corporation, it was quite natural that agricultural co-operatives on the urban fringes began to grow other crops instead of vegetables, hoping to prevent further financial losses. Further, another factor contributing to the failure of the NVC was the policy of "guaranteed purchase and guaranteed marketing". Under the system the NVC guaranteed to pay agricultural co-operatives according to the volume of vegetables they produced, disregarding the quality. The urban markets were subsequently flooded with inferior-quality vegetables which consumers were reluctant to purchase. Consequently heavy financial losses were incurred by the state trading organization.

In Shanghai the decline in vegetable production and supply was exacerbated by natural disasters that occurred over a vast territory of North China. One of the worst floods since 1949 occurred in 1956. Over 164 million mou (over 27 million acres) of farmland was inundated.[34] The cotton producing areas in north China were seriously affected. A sharp drop in cotton production caused an acute shortage of raw material for the nation's textile industry, and large amounts of industrial cotton had to be imported from Egypt, Pakistan and Syria. At the same time, the State Council issued a directive to urge strengthening the

production, leadership and organization of the agricultural co-operatives - a means to lessen the impact of natural disasters on agricultural production. In particular, it stressed the need for increased cotton production.[35]

As an overt measure to encourage peasants to convert market gardens into cotton fields in the suburban areas the NVC in Shanghai depressed the purchase price of vegetables and added 2 per cent surcharge for handling fees. The Municipal Bureau of Agriculture in Shanghai reported that the average purchase price of vegetables declined by 18 per cent of that of the same period of the previous year (1955). The purchase price for some varieties of vegetables even dropped below the cost of production, and consequently, this price change reduced the income of agricultural co-operative members by over 30 per cent.[36] As a result of the new policy, there was no increase in vegetable acreage in suburban Shanghai during the period between mid-1956 and mid-1957.[37]

Institution of the Free Market System

The pricing policies and mismanagement of the NVC, together with the state policy of lowering the official purchase price of vegetables to alleviate the shortage of cotton effectively destroyed the peasant's incentive to produce vegetables. By the latter part of 1956, vegetable co-operatives in suburban China were reported as abandoning plans to grow autumn vegetables, and some co-operative members even became pedlars in cities.[38] To remedy the

situation the urban free market[39] was instituted on 24 October 1956. It was introduced as a supplement to state trade by Liu Shao-chi, former chairman of the Central Committee of the CCP. In his speech at the Eighth National Congress of the Communist Party held in September, Liu declared that the system of state purchase and supply needed to be changed and replaced by measures that would suit the existing economic conditions:

> ... the strict control enforced on the markets of cities and towns and the uniform prices fixed for commodities... produced some undesirable effects: the quality of some industrial products was lowered, the output of some agrarian products fell, and the exchange of some commodities was hampered. We should abolish restrictions which are too strict and too inflexible. Within the limits of the unified socialist market, we should permit the free market to exist, and to develop to a certain extent under the guidance of the State.[40]

The major objective of this free trading system introduced in urban areas was to stimulate the production of vegetables and other subsidiary foods in suburban areas, and thus to increase their supply to urban residents. It was hoped that an increase in vegetable production could be achieved through the increase of yield per unit area, despite reduction of vegetable acreage. Under the free market system, the NVC which previously acted as middleman between vegetable producers and vegetable retailers was eliminated. Peasants or co-operative members were allowed to sell their vegetables and other subsidiary foods directly to vegetable retailers, food units of government offices and educational institutes and restaurants in a number of markets located at designated points in cities. Producers were permitted to sell vegetables outside designated free markets, within

urban areas, but only in retail quantity to consumers. Further, to regulate supply and demand, and to stabilize the vegetable market, the state commercial organization made transactions within the free market and established procurement stations at "strategic" points within cities. With the abolition of the system of "guaranteed purchase and guaranteed marketing" originally adopted by the NVC, the price of vegetables sold at the free market varied within a predetermined range, according to the quality of the produce, as well as high or low season. In general, the price secured by peasants for their agricultural produce was higher than that previously offered by the state purchasing and marketing agents. The new free trading system achieved the intended result almost instantaneously. Many cities reported a sudden increase in the supply of fresh vegetables, ranging from 30 to 70 per cent.[41] In Canton, for example, from the second half of October to the first half of November, 1956, about 1 million jin (c. 1.1 million pounds) of vegetables reached the market, an increase of 30 per cent over the amount marketed before opening of the free market. Tomatoes, yams, ginger roots and garlic which had long been short in supply became abundant again. Other subsidiary foods such as fowls and fish were nearly 100 per cent more than those sold in September.[42] This free trading system, however, was very short lived. Although it did actually stimulate production and supply of certain agricultural produce to urban centres, it also brought about some undesirable repercussions which the authorities failed to anticipate. As the price of

vegetables sold on the free market was higher than the state purchase price, many agricultural co-operatives in Canton's suburbs, for example, were unwilling to fulfil the contracts previously signed with the National Vegetable Corporation. The vegetables were sold on the free market for larger profit. This greatly affected the fulfilling of export plans by state enterprises and the planned supply of vegetables to northern cities.[43] The higher financial incentive for growing vegetables created problems in the planned production of other agricultural produce. Many members of suburban co-operatives were not interested in producing those produce placed under the state procurement plan, such as sugar cane and clover, since they would yield a much lower financial return than vegetables. For example, members of the Chukiang Agricultural Co-operative in suburban Canton expressed discontent at growing sugar cane, as their annual income per mou of sugar was only about 80 to 90 yüan, whereas that per mou of vegetable was at least five times higher, ranging from 400 to 500 yüan.[44] Further, peasants who sold their agricultural produce on the free market soon discovered that peddling in cities was more financially rewarding than farming. Consequently, many peasants in suburban areas abandoned farm production for trade, and even moved permanently into cities.[45] This influx of peasants into cities might have contributed to the peak of rural-urban migration in 1957. It was also admitted that agricultural commodities subject to planned production and unified purchase by the state began to drift into the free market. Speculation and hoarding of

agricultural commodities previously placed under state control reappeared.[46] Because of these problems, the free trading system of vegetables and subsidiary foods in urban centres was finally abandoned in mid-1957.[47] The abandonment of the free market system in urban centres represented a setback to another approach adopted by the central authorities to achieve self-sufficiency in vegetable supply in large cities.

New problems in Vegetable Supply to Urban Centres

After the abolition of free marketing of vegetables and subsidiary foods in cities, the NVC resumed large scale operations in transferring fresh vegetables from producing regions in the warmer south or even from distant sources, in order to maintain an adequate supply to the northern industrial centres. In Shanghai, to guarantee the daily supply of four million catties (5.3 million pounds) of fresh vegetables in 1957, an average of one million catties (1.3 million pounds) had to be imported daily from distant sources such as Kwangtung, Hopeh, Shensi, Inner Mongolian Autonomous Region, Kansu, Honan and Fukien.[48] The shipping of seven billion catties (9.1 billion pounds) of vegetables from Shantung, Kwangtung, Chekiang and Kiangsi to Peking, Tientsin, Hankow and other northern cities, and to new mining and industrial districts, is reported to have involved over 18,000 railway freight cars.[49] Further, the State subsidized heavily the high cost of transporting fresh vegetables over long distances. To alleviate the

shortage of supply in Peking alone, the shipment of only 75 million catties (97.5 million pounds) of vegetables to that city cost the state over 1.5 million yüan.[50] This reliance on outside sources of supply raised further new problems in the supplying areas. The temporary failure to place vegetables under state control via the NVC in 1956 often caused rapid inflation of prices whenever a sudden increase in demand arose. Because of increased purchasing by local vegetable corporations from other provinces in the vegetable producing regions in Shantung, for example, the average wholesale price of the eight main varieties of vegetables in the city of Tsinan rose by 172 per cent in one year.[51] After 1956 the NVC encountered other problems. The Corporation found it increasingly difficult to fulfil its assigned task of maintaining adequate vegetable supplies to large urban centres. First, after the central government had modified its locational policy in April of 1956, many industries were established or expanded in the existing coastal industrial cities and other non-key-point cities in the northeast. These new industrial developments were accompanied by a rapid expansion of urban functions into the suburban areas, a common phenomenon observed previously in the key-point cities. Large tracts of market gardens in the environs of most of these cities were inevitably encroached upon in the process. By late 1956 about 10 square kilometres of suburban Canton had been expropriated or used for new municipal and industrial construction.[52] At the First People's Congress held at Canton, complaints about the large-scale expropriation of productive farmland in

suburban areas were voiced by Yang Tso-sang, a representative at the meeting. Yang emphatically pointed out that 13,000 mou (c.2,200 acres) of farmland in the suburban area of Canton had been expropriated in 1956 as the result of large scale industrial construction and municipal expansion. Most of this land was located in major vegetable growing areas and economic crop areas at the villages of Sanyüanli,[53] Shihpei and Fengchiang. Yang further warned that displacement of large numbers of vegetable growers and continuing conversion of vegetable plots into construction land in the "near suburb" would drastically reduce the supply of vegetables for the city of Canton.[54] Reduction in vegetable production due to decreases in vegetable acreage in this major producing area, would no doubt, seriously affect export to the industrial cities in the north. Indeed, an editorial of the People's Daily related the impact of industrial urbanization on suburban market gardens in vegetable surplus areas, and strongly stressed the need for developing subsidiary food production near all centres of consumption:

> ... consequent upon the nation-wide industrial development, cities and industrial and mining districts have been increasing in number and size. Large scale industrial expansion will gradually emerge in every province and region. Because of these changes, vegetable surplus areas that have been formerly exporting large quantities of vegetables will no longer be able to do so, in order to meet increasing local needs... Subsidiary food production should be carried out in the vicinity of urban markets. For market garden planning, consideration should be given to climatic requirement of different kinds of vegetable. In regions where there is a high probability of drought, flood and frost, the quantity of vegetable planted should be determined in accordance with the probability of occurrence of natural disaster,

> so that normal supply may always be maintained. When formulating urban plans, existing vegetable land should not be excessively expropriated, and at the same time, new market gardens should be developed according to plan. Those vegetable plots that have been designated for capital construction use should be retained for vegetable production, whenever possible, before actual construction work commences.[55]

Growing Demand for Vegetables in Cities

The problem of inadequate supply of vegetables to northern urban centres was further aggravated by the rapid increase in demand. During this period of fast economic growth, the scale of urbanization was unprecedented in the urban history of China. The urban population grew from 57.65 million in 1949[56] to 77 million in 1953 when the first official national population census was taken,[57] and by 1956 it had further increased to 89.15 million.[58] This represents an increase of more than 54 per cent over the 1949 figure. The impact of the concentrated pattern of industrial activities on urban population was significant. Substantial rates of urban population increase were recorded in the key-point cities designated for intense industrial development during the period 1953-57. Table 6.1 reveals this pattern of urban growth. For example, the increase of population in Peking reached 45 per cent, Wuhan 50 per cent, Sian 67 per cent, Anshan 47 per cent, Shihchiachuang 60 per cent, Tsitsihaerh 94 per cent, and Lanchow 76 per cent.

Wu's study on the growth pattern of 117 cities during the periods 1948 to 1953 and 1953 to 1958 revealed

TABLE 6.1 Population Change in Cities of 30,000 or More Inhabitants 1953-1957.

City	Location	Population ('000) 1953	1957	Absolute Increase	Per Cent Increase
Shanghai	Coastal	6,204.4	6,900	695.6	11.2
Peking	"	2,768.1	4,010	1,241.9	44.9
Tientsin	"	2,693.8	3,220	526.2	19.5
Shenyang	Northeast	2,299.9	2,411	111.1	4.8
Chungking	Interior	1,772.5	2,121	348.5	19.6
Canton	Coastal	1,598.9	1,840	241.1	15.1
Wuhan	Interior	1,427.3	2,146	718.7	50.4
Harbin	Northeast	1,163.0	1,552	389.0	33.4
Nanking	Interior	1,091.6	1,419	317.4	29.9
Tsingtao	Coastal	916.8	1,121	204.2	22.2
Ch'engtu	Interior	856.7	1,107	250.3	29.2
Changchun	Northeast	855.2	975	119.8	14.0
Sian	Interior	787.3	1,310	522.7	66.5
Lüta	Coastal	766.4	1,508	741.6	69.1
Taiyüan	Interior	720.7	1,020	299.3	41.5
Kunming	"	698.9	880	181.1	26.0
Hangchow	Coastal	696.6	784	87.4	12.5
Tangshan	"	693.9	800	106.1	15.4
Tsinan	"	680.1	862	181.9	26.8
Fushun	Northeast	678.6	985	306.4	45.1
Changsha	Interior	650.6	703	52.4	8.0
Chengchow	"	594.7	766	171.3	28.7
Wusih	Coastal	581.5	613	131.5	5.3
Foochow	"	553.0	616	63.0	11.4
Anshan	Northeast	548.9	805	256.1	46.6
Soochow	Coastal	474.0	633	159.0	33.5
Kirin	Northeast	435.2	565	129.8	29.9
Lanchow	Interior	397.4	699	301.6	76.1
Shihchiachuang	Coastal	373.4	598	224.6	60.3
Hsuchow	"	373.2	676	302.8	81.2
Tsitsihaerh	Northeast	344.7	668	323.3	93.6

Source: Population data for cities of 500,000 or more inhabitants in 1953 was derived from Table 5: Cities of 500,000 or more inhabitants: 1953, Orleans, L.A., Every Fifth Child, (London: Eyre Methuen, 1972), p.61. 1953 and 1957 population figures for cities of 300,000 or more inhabitants were extrapolated from Wei-ta ti shih-nien Chung-hua jen-min kung-ho-kuo ching-chi ho wen-hua chien-she ch'eng-chiu ti t'ung-chi (The Ten Great Years - statistics on Economic and Cultural Achievements in the People's Republic of China)(Peking: Jen-min ch'u-pan-she, 1959), pp. 9-10.

Note: The cities underlined, e.g. Peking, are key-point cities.

a strong trend towards "urban gigantism" in the latter period. It convincingly showed that in the period 1948-1953, the medium-sized cities with populations ranging from 300,000 to one million grew faster than the large cities with population over one million. The growth rate was 58.82 per cent for the former and 28.57 per cent for the latter. However, the growth rate reversed in the period 1953-1958; the large cities grew by 66.67 per cent whereas the medium-sized cities only by 25.93 per cent.[59] Also, by 1958 there were 15 large cities with populations of over 1 million, as compared with only 9 in 1953.[60] Most of these metropolitan centres were among the country's major industrial centres. Three of these five new "million cities", including Ch'engtu, Sian and Taiyüan, were all key-point cities in the interior. In Shanghai the population in mid-1956 was 6.08 million; it had risen to 6.57 million by the end of the year - an increase of nearly half a million people within a six month period! "Blind influxes" of peasants from the suburban areas of the city and neighbouring provinces probably accounted for the majority of the increase.[61] It further grew to 7.25 million in 1957.[62] Table 6.2 shows fluctuation of the annual consumption of vegetable per capita in Shanghai between 1953 and 1957. The downward trend of per capita consumption since 1956 demonstrated the combined effects of decrease in the total volume of vegetable supply, both from the city's suburban areas and from imports, and the substantial increase of the city's population in 1956 and 1957. Thus, despite the central government's continuous effort to expand vegetable

TABLE 6.2 Annual Consumption of Vegetables per Capita in Shanghai 1953-1957 (in chin)

	Amount	Per Cent Change
1953	174	-
1954	186	+6.6
1955	240	+29.0
1956	213	-11.2
1957	195*	-8.4

* Estimated figure

Source: JMJP, 27 November 1957.

acreage in suburban areas and to organize supply from areas of surplus throughout the First Five Year Plan period, the supply of fresh vegetables in many northern industrial cities had not shown any significant improvement. On the contrary, the acute shortage of vegetables became a serious problem in large cities such as Peking, Tientsin, Shanghai and Wuhan, when rural-urban migration reached the peak early in 1957.

In the latter part of the same year, a fresh approach to augment supply of vegetables and subsidiary foods by local effort was initiated at large urban centres. Municipal governments began to tap supply sources at neighbouring counties to meet the increasing demand. This measure reduced the need for long distance interprovincial transfer, and to alleviate the short supply from the diminishing market gardens near industrial centres.

In Wuhan the existing 37,500 mou (6,250 acres) of

vegetable fields were able to supply less than two-thirds of the city's needs, assuming a ration of half a chin of vegetable per day for each of the 2 million inhabitants. Besides expanding 4,000 mou (over 650 acres) of new vegetable plots, the bulk of the deficiency was made up by importing vegetables grown in vegetable bases designated by Wuhan's municipal people's government for the city at Hanchuan, Tienmen and Yünmun in the neighbouring counties.[63] A similar arrangement was made in Shanghai to ensure an adequate supply of subsidiary foods for the 7 million inhabitants. The municipal government negotiated with authorities of neighbouring counties and province for subsidiary food production bases for the city. The Service Bureau of Shanghai invested 1.2 million yüan on pisciculture in south Kiangsu province, as well as the counties of Chingpu, Chiating, and Nanhui, and on developing river fishery at Ch'ungming. Another investment valued at over 100,000 yüan was made toward the establishment of a thousand-mou orchard at Chuntse County of Kiangsu province for supplying fruits to Shanghai's consumers.[64] Even in Canton, a traditional vegetable surplus centre, the supply from its dwindling suburban vegetable plots became insufficient. An increasing amount of vegetables for the city's need had to be imported from the counties of Nanhai and Panyu, lying to the south of the city. They virtually became the major vegetable supply base for this industrial centre.[65]

A New Strategy towards Self-sufficiency in Urban Vegetable Supply

The problem of the fast and often chaotic spatial growth of urban centres was appreciated by high ranking economic planners in China as early as mid-1955, and a negative attitude developed towards large cities. At the second session of the first National People's Congress held on July 5-6, 1955, Li Fu-ch'un, chairman of the State Planning Commission, commented on the draft of the First Five Year Plan, and urged that the task of urban construction should be focussed on the development of small and medium sized urban centres and the restriction of further expansion of large cities.[66] From available evidence, this appeal was ineffective, as the large cities in China continued to grow unabated.

A resolution concerning development and planning of new industrial cities and new industrial districts was passed at a meeting of the Standing Committee of the State Council on 8 May 1956. It introduced the principle of urban development and distribution of industry within the context of regional planning, with guidelines for optimal size of urban centres and location of industries within large industrial centres.

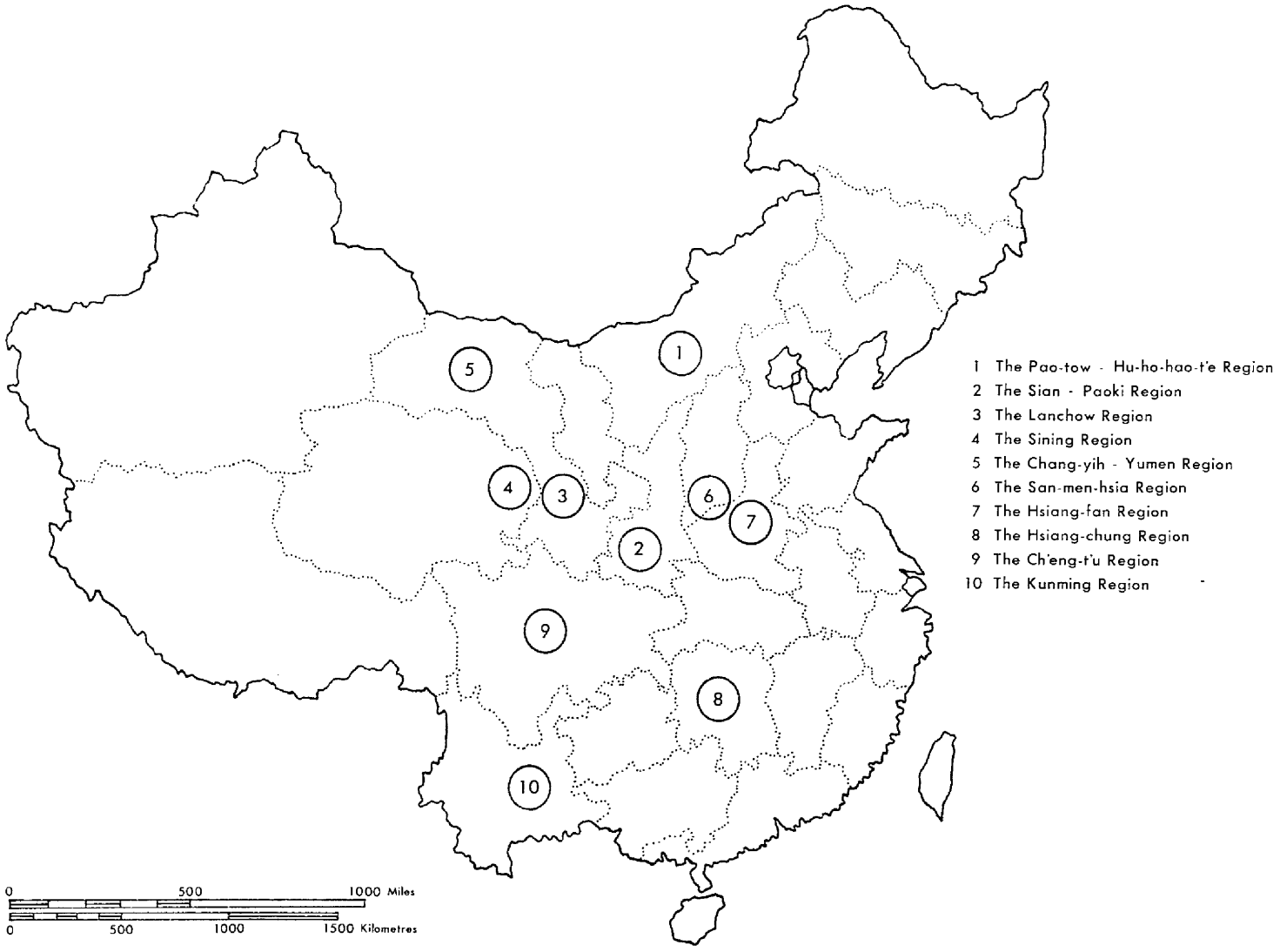
For the first time in China, the concept of designing and developing of new cities and the distribution of industry as an integral part of planning of a city region or an economic region had emerged. Such regional plans were to encompass planning of all major construction, industries,

energy supply, transportation, communications, irrigation, agriculture, forestry and urban areas in accordance with the physical and economic conditions of a region and the long range economic development plan of the State. The Department of Urban Construction, the State Economic Commission, and the State Planning Commission jointly formulated regulations governing such planning. Execution of such plans lay within the jurisdiction of the People's Committee of the province, special municipalities and autonomous regions.

Initially, priority was given to planning ten regions, each centred on one or two major industrial centres in the interior. These ten urban-centred planning regions included the Paot'ou - Huhohaot'e Region, the Sian - Yumen Region, the Sanmen Hsia Region, the Hsiangfen Region, the Hsiangchung Region, the Ch'engtu Region and the Kunming Region (Map 6A).

As an overt attempt to reverse the prevailing trend of "urban gigantism", the resolution also strongly emphasized decentralization of manufacturing activities to small and medium-sized cities within a region. Under special circumstances when new industrial developments had to be undertaken in large cities, they were to be located at a certain distance from the central city. Furthermore, new industrial districts were to be established at greater distances apart. Since population increase also has contributed to spatial growth of cities, the resolution set guidelines on the optimum size of urban population. Urban centres with a population between 30,000 and 50,000, and not exceeding 100,000 were

THE URBAN-CENTRED PLANNING REGIONS



1 The Pao-tow - Hu-ho-hao-t'e Region
2 The Sian - Paoki Region
3 The Lanchow Region
4 The Sining Region
5 The Chang-yih - Yumen Region
6 The San-men-hsia Region
7 The Hsiang-fan Region
8 The Hsiang-chung Region
9 The Ch'eng-t'u Region
10 The Kunming Region

MAP 6A

considered as ideal. Those with 200,000 to 300,000 inhabitants would only be built in localities where suitable conditions prevail. Larger cities with over 300,000 population would not be built unless absolutely necessary.[67]

This departure from the Soviet model of industrial centralization and massive nodal urbanization initiated a new phase of urban and suburban development in China. For economic and national security reasons, the Chinese began to build small cities and disperse all industrial functions. Also, a new concept of city region emerged. By means of urban centred planning units, the Chinese hoped to arrest the accretional growth of built-up areas in large urban centres. This was to be achieved by dispersing population and industries from large industrial centres to satellite towns in their environs.[68] Another major objective of this administrative reorganization effort was to achieve self-sufficiency in the supply of fresh vegetables and other subsidiary foods in large urban centres. This approach was apparently in line with the policy of regional self-reliance and self-sufficiency in economic development which was vigorously promoted early in 1958.

Each of these urban-centred planning units consisted of a central city and a large suburban territory. (Table 6.3) The municipal government was to exert direct administrative control over the vast agricultural area, as well as the central city and its satellites. Its other important function was to adopt a unitary planning approach for the entire spatial unit, facilitating decentralization of industrial activities from the central

TABLE 6.3 Territorial Changes of Selected City Regions 1949-1974 (in square kilometres)

Central City	1949	1958	1974
Amoy[a]	110	456	1,976.8
Canton[b]	382	1,261	4,107
Ch'angch'un[c]	-	1,116	19,897
Ch'engtu[d]	29.9	280.6	754.8
Chungking[e]	328	1,100	7,447.5
Nanning[f]	-	128	693.8
Peking[g]	700	16,800	16,565
Shanghai[h]	617	5,916	5,996.4
Shihchiachuang[i]	124	3,134	Defunct
Sining[j]	-	140	3,226
Tientsin[k]	61	20,000	10,970.8
Urumchi[l]	81.3	640	38,873.8
Wuhan[m]	-	1,490	1,476

Sources:

a TLCS, no.3, 1975, p.8.

b. TLCS, no.2, 1959, p.73.

c TLCS, no.11, 1959, p.538.

d CTJP, 12 September 1957.

e TLCS, no.3, 1958, p.104.

f CSCS, no.10, 1959, p.12.

g TLCS, no.11, 1959, p.410.

h HWJP, 25 December, 1958.

i TLCS, no.11, 1959, p.501.

j Peking Review, no.13, 1974, p.31.

k Ullman, M.B., Cities of Mainland China: 1953 and 1958, U.S. Department of Commerce, Bureau of the Census, International Population Reports, Series P-95, no.59, August 1961, Appendix D, p.42.

l Hsin-chiang jih-pao (Sinkiang Daily), Urumchi, 19 May 1958.

m Jeffrey, N., "Administrative/Political Structure for Planning", Architectural Design, no.3, 1974, p.146.

* Chung-hua jen-min kung-ho-kuo fen-sheng ti-tu-tse (Provincial Atlas of the People's Republic of China), (Peking: Peh-ch'ing ti-tu ch'u-pan-she, 1974), various pages. The set of 1974 figures was obtained by measuring the map areas of the respective city regions in the Atlas with an electronic digital planimeter.

city to the suburban area, reorganization and planning of agricultural land use with special emphasis on achieving self-sufficiency in vegetable supply, population planning, development and utilization of local transportation, and mobilization of manpower.

Between 1949 and the end of 1957, only 16 municipalities had recorded their boundary changes, whereas in 1958 alone, 58 city governments incorporated vast suburban territories. The suburban areas of Peking, Shanghai, and Chefoo of Shantung province expanded twice by a substantial amount within the same year.[69] Since 1958 many city regions adjusted their boundaries to suit local planning requirements. New units were created and some old ones abolished. By 1974, 82 city regions were in existence (Map 6B).

Among the 58 city regions created in 1958, very notable expansion of suburban territory took place in Peking, Shanghai, and Tientsin, the three special municipalities in the People's Republic.

THE CITY REGIONS OF CHINA 1974

Map legend on separate sheets

Key to Map: The City Regions of China 1974.

Special Municipalities

1 Peking
2 Shanghai
3 Tientsin

Anhwei
4 Hofei
5 Huainan
6 Huaipeh
7 Maanshan
8 Pangpu
9 T'ungling
10 Wuhu

Chekiang
11 Hangchou
12 Ningpo
13 Wenchou

Fukien
14 Amoy
15 Foochow

Heilungkiang
16 Anta
17 Ch'ich'ihaerh
18 Chihsi
19 Haerhpin
20 Hokang
21 Shuangyashan

Honan
22 Chengchow
23 K'aifeng
24 Loyang
25 P'ingtingshan

Hunan
26 Ch'angsha
27 Chuchow

Hupeh
28 Huangshih
29 Shihyen
30 Wuhan

Inner Mongolia Autonomous Region
31 Huhohaot'e
32 Paot'ou

Kansu
33 Lanchow

Kiangsi
34 Chingtechen
35 Nanch'ang
36 Pinghsiang

Kiangsu
37 Ch'angchow
38 Lienyünkang
39 Nanching (Nanking)
40 Nant'ung
41 Soochow
42 Süchow
43 Wusih

Kirin
44 Ch'angch'un
45 Kirin

Kwangsi Chuang Autonomous Region
46 Kueilin
47 Luichow
48 Nanning
49 Peihai
50 P'inghsiang
51 Wuchow

Kwangtung
52 Canton

Kweichow
53 Kueiyang

Liaoning
54 Anshan
55 Chinchow
56 Fuhsin
57 Fushun
58 Liaoyang
59 Lüta
60 Pench'i
61 Shenyang
62 Tantung
63 Yingk'ou

Ninghsia Hui Autonomous Region
64 Yinch'uang

Shansi
65 Taiyüan

Key to Map: The City Regions of China 1974 (cont'd)

Shantung
66 Tsaochuang
67 Tsinan
68 Tsingtao
69 Tzupo

Shensi
70 Paochi
71 Sian
72 T'ungch'uan

Sinkiang Uighur Autonomous Region
73 Karamai
74 Urumchi

Szechwan
75 Ch'engtu
76 Chungking
77 Tukou

Tibetan Autonomous Region
79 Lhasa

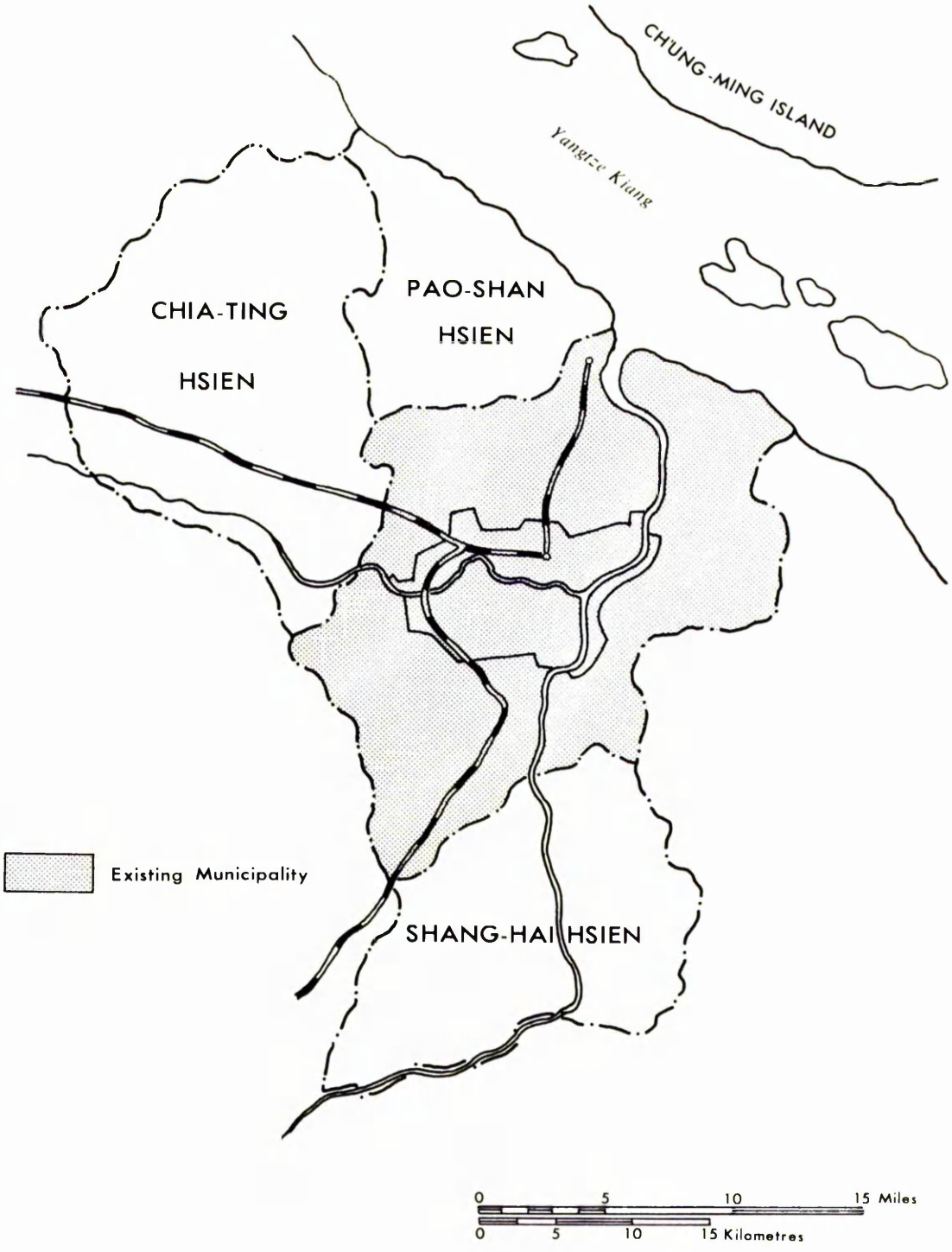
Tsinghai
80 Hsining

Yünnan
81 K'unming
82 Tungch'uan

In March 1958, permission having been granted by the State Council, the Peking Municipal Government incorporated Tung Hsien and the town of Tungchou to the east of the city, Shunyi Hsien to the northeast, Tahsing Hsien to the southeast, and Fangshan Hsien and Lianghsiang Hsien to the southwest. The expansion increased the municipal area to 3,386 square miles. Subsequent expansion of the city's municipal area in October of the same year was directed mainly northward, including mountainous areas lying beyond the Great Wall. As a result, the Peking Municipality covered an area of 6,602 square miles;[70] this is slightly larger than Northern Ireland or the State of Hawaii. On 17 January 1958, the State Council issued a decree, allowing the Shanghai municipal government to extend its jurisdiction over three adjacent hsien for establishing an urban region. The newly incorporated territory included the hsien of Chiating, Paoshan and Shanghai, originally part of Kiangsu Province. This administrative change increased the total area of Shanghai's suburban areas by over 863 square kilometres.[71] (Map 6C). In December of the same year, further large scale areal expansion took place in the city region. The administrative boundaries were extended to include the surrounding hsien of Ch'uansha, Nanhui, Fenghsien, Chinshan, Sungchiang, Chingpu. and Ch'ungming, formerly of Kiangsu province. A territory of 5,910 square kilometres was thus placed under the direct control of the Shanghai People's Municipal Government.[72] (Map 6D). From 1949 to late 1957 the total areal expansion of the city of Tientsin was from 61 square kilometres to 97 square kilometres. When the urban region was created at Tientsin, the total area of the

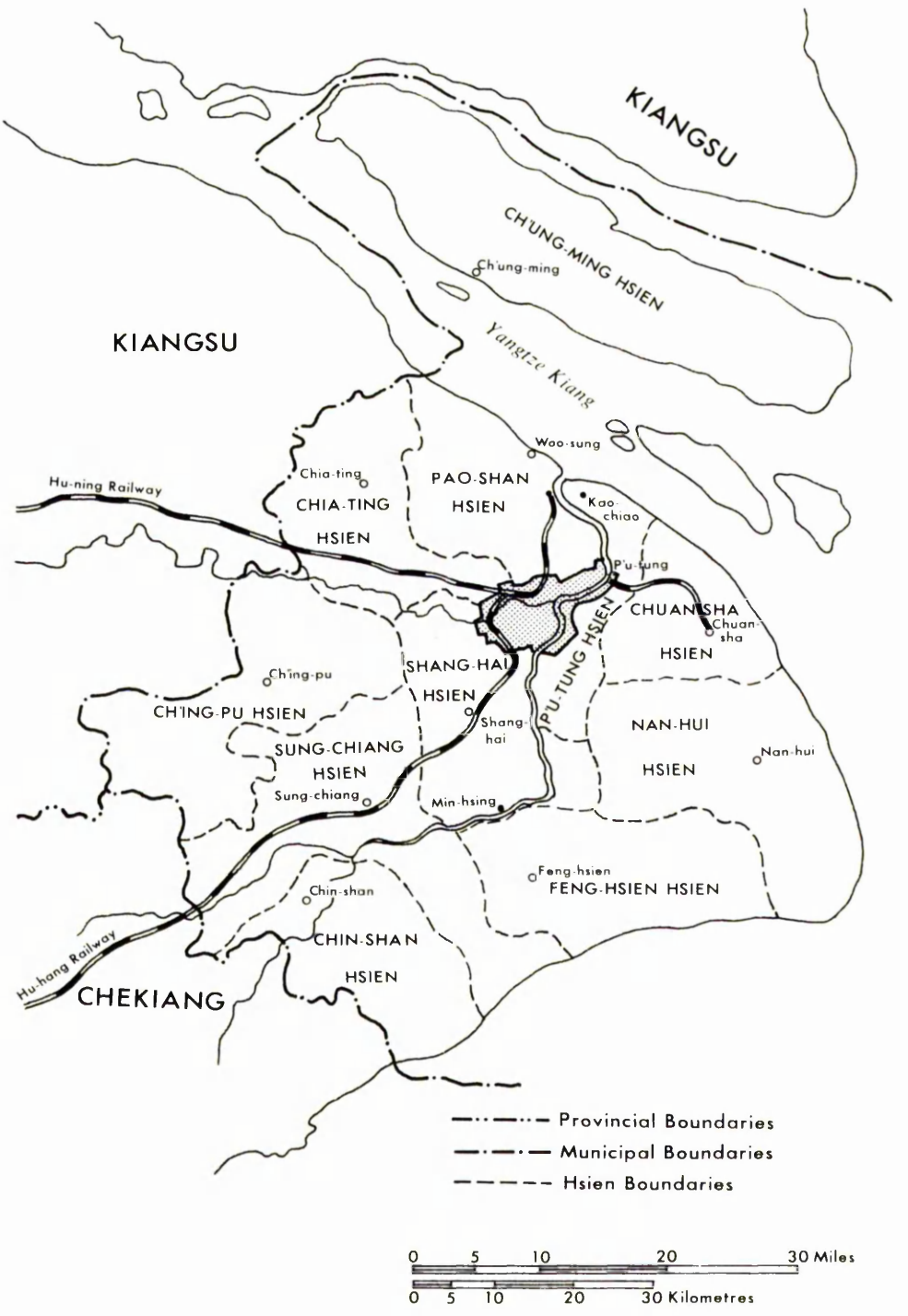
MAP 6C

THE CITY REGION OF SHANGHAI
1958 (January)



MAP 6D

THE CITY REGION OF SHANGHAI
1958 (December)



entire municipality was increased to nearly 20,000 square kilometres.[73]

In 1958 city regions were established in every province and autonomous region, as well as all the three special municipalities. In terms of regional distribution, 26 of these spatial units were in east China. In a descending order, this was followed by 9 in north China, 8 in central, 8 in northwest, 8 in southwest, 7 in south and 5 in northwest China. Both east China and northeast China combined shared over half of the total number, reflecting their dominant economic importance. In China's city region system, each of the administrative-planning unit consisted of one central city and a large suburban hinterland. In some units satellite industrial communities developed around the central city, e.g. Shanghai, Tientsin and others. Without exception, all the central cities were nodes of high administrative hierarchy, such as capitals of special municipalities, provinces and autonomous regions. They were urban settlements with over 100,000 population, including all the "million" cities, large and medium-sized cities. With regard to economic significance, all the 58 central cities performed a wide range of modern manufacturing activities, including the eight largest iron and steel bases that formed the backbone of the nation's industrial development: Anshan, Wuhan, Paot'ou, Taiyüan, Maanshan, Chungking, Shanghai and Ch'engtu. Others were settlements associated with important coalfields, oilfields and mining centres.

Most central city governments acquired a vast

territory to administer. In 1958 the City Regions of Tientsin and Peking extended over an area of about 20,000 square kilometres and 16,000 square kilometres respectively. From 1958 to 1974, the total number of urban centred planning units increased from 58 to 82; 53 of which covered an area exceeding 1,000 square kilometres. Of these, as many as 33 occupied an area ranging from 1,000 to 5,000 square kilometres, 8 from 5,000 to 10,000 square kilometres, 11 from 10,000 to 50,000 square kilometres. The Lhasa City Region, the largest of all, exceeded 100,000 square kilometres.

There is no correlation between population size and areal extent of these administrative-cum-planning units. However, based on available data it may be interpreted that their size varies according to the planning requirements and specific needs of each individual unit. For example, the City Region of Lhasa was established in 1959 by incorporating eight hsien.[74] In 1964 it became the largest city region in China as a result of annexating another three hsien.[75] The primary aim of this new development was to achieve self-sufficiency in food supply, and industrial raw materials for the thriving textile industry in Lhasa, capital of the Tibetan Autonomous Region, and other major settlements: Nyingchi, an industrial satellite of the capital city, Tzedthang, Chhonggyai, Gyantse, Todlundechha, Nyemong and Shigatse.[76] This vast geographical unit facilitated agricultural resource planning and development in an area with marginal soils and less favourable climatic conditions. Within the Tsingpo River Valley, agricultural

communes undertook large scale land reclamation, soil improvement and irrigation.[77] The successive expansion of the City Region of Peking was to serve the need for long term water resource planning and development. The municipal water supply of Peking prior to 1954 was almost entirely dependent on local wells as Yung-ting Ho, the major river running through the southwestern suburban area of the capital, has a highly fluctuating hydrological regime. The fast growing urban population and industrialization in the early years of the First Plan period soon depleted this source of water supply. The excessively high content of calcareous minerals in the underground water makes it unsuitable for most industrial use. As the average annual precipitation at the capital and its environs is only about 60 centimetres, and as there is an immense seasonal variation in the precipitation regime, it makes surface water an unreliable source of supply, unless a number of large reservoirs could be constructed near the city. In 1954 surface water was diverted to Peking for urban use from the Kuanting Reservoir built on the Yungting River ten miles to west of the city.[78] Because of further increase in demand for water, the second territorial expansion of the municipality was necessary. The expansion involved annexation of some counties to the north and the northwest where the rugged terrain of the foothills of Yen Shan provided suitable sites for reservoir construction. Since the establishment of the Peking City Region in 1958, seven more reservoirs of large storage capacity have been constructed in the suburban areas, and within a radius

of less than 70 kilometres from the city. Among these, the Miyun Reservoir constructed within Miyun Hsien located in the northeastern part of the Peking City Region, has a total capacity of 4.1 billion cubic metres. The largest reservoir in north China mainly supplies water for industrial use in the capital.[79] In the case of Chungking, an emerging industrial base in the agriculturally rich Szechwan province in southwest China, new industries developed in the city included iron and steel, heavy machinery and chemical works. The decision to expand the suburban territory of the city region was influenced by the urgent need to improve fuel supply for the city's growing iron and steel industry. In 1955, an area of 267 square kilometres was added to the 833.08 square kilometre municipality. The territory incorporated was the Nantung mining district, lying to the south of the municipality. It had been a major source of coal supply for Chungking's growing industries and thermal power generation.[80] The primary aim of the territorial expansion of the suburban area, therefore, was to facilitate better coordination between industrial development and coal production in this thriving industrial base of the southwest. A similar economic factor had been taken into consideration in the development of the Hangchow City Region. Following several expansions it became the largest urban centred planning unit in eastern China, surpassing the Shanghai City Region by almost three times. In 1957 Hang Hsien was first placed under the administrative control of the municipality.[81] In 1959 the counties of Shiushan and Fuyang were added.[82] The territory incorporated in 1960 included the counties of Yuhsing,

Tunglu, and Linan, and the final expansion in 1964 added Chient'e Hsien and Chunan Hsien.[83] Its southwestward expansion since 1960 incorporated the important Hsinan Kiang hydro-electric power development, a vital source of power supply for the industries of Hangchow, Shanghai and its satellites. Therefore, as exemplified by the city regions mentioned above, apart from achieving self-sufficiency in vegetable supply in major industrial cities, it seems possible that the physical characteristics and resource endowment of the surrounding areas of a city, as well as its specific planning and developmental needs are among some of the factors involved in the delimitation of the areal extent of city regions in China.

Spatial Reorganization of Agricultural Land Use within the City Region

Since the establishment of city regions in China's important industrial centres in 1958, a significant development in agricultural land use was initiated within these urban-centred planning units during the late 1950s and early 1960s. The change involved large scale conversion of urban fringe crop lands into intensively cultivated market gardens by suburban communes; the scale of the change surpassed that of 1953.

In Liaoning, a province with many industrial cities, the total area of vegetable fields in 1959 reached 344,000 hectares, representing an increase of over 70 per cent of that in 1958.[84] From 1958 to 1960 the total area

of market gardens within Tangshan's suburban areas increased by 5.84 times.[85] Data available on several other city regions also indicated very impressive increase in vegetable growing area from 1957 to 1959 (Table 6.4).

TABLE 6.4 Expansion of Vegetable Land in Selected City Regions 1957-1959 (in mou)

City	1957	1958	1959
Shanghai	230,000[a]	350,000[b]	400,000[c]
Wuhan	37,000[d]	-	180,000[e]
Taiyüan	-	40,000[f]	90,000[f]
Chungking	5,000[g]	12,500[g] 30,000[h]	
Canton	-	65,000[i]	208,000[i]

Sources:

a HWJP, 23 September 1959.

b CFJP, 5 October 1958.

c HWJP, 27 December 1959.

d CCJP, 4 October 1957.

e NCNA Wuhan, 30 June 1959.

f JMJP, 30 May, 1960.

g CKJP, 9 January 1958

h HWJP 26 May 1959
Note: The first figure indicates area of market gardens at the beginning of the year, whereas the second one is the year end figure.

i NFJP, 15 May 1959.

Policies of the central administration placing special emphasis on self-sufficiency in vegetable supply in industrial cities must have provided impetus for the large scale land use changes within the city regions. Concurrent with the establishment of these planning units, the central committee of the CCP and the State Council jointly issued

a directive on vegetable production work in mid-1958.[86] The second joint directive appealing for increasing production and supply of vegetables appeared at the end of the same year.[87] Further, the National Conference on Agricultural Work held in January 1959 played an important role in this new development. At the Conference the relationships between agricultural planning and the newly established rural communes were discussed. Following the debate a number of agricultural policies were adopted. One of these urged the agricultural communes located near urban centres to set up special vegetable bases, and to plan vegetable production according to the size of urban population.[88] Specific policy on spatial reorganization of agricultural land use within the city regions was introduced at the conference on production of subsidiary foods and handicrafts in large and medium-sized cities held from 18 to 23 of June 1959 in Shanghai. The meeting was convened by the central authorities and chaired by Li Hsien-nien, vice-premier of the State Council, committee member of the Central Politburo, and secretary of the Central Secretariat. Officials of the State Council, secretaries of the municipal committees of Peking, Shanghai, Tientsin, Canton, Wuhan and another twenty-eight large and medium-sized cities, and personnel of the agricultural and commercial departments of these municipalities were among the one hundred and sixty five participants. The main theme of the conference focussed on formulating principles and policies on subsidiary food and handicraft production in suburban areas of cities. With regard to production of vegetable and subsi-

diary foods, the policy emphasized the spatial reorganization of agricultural land use:

> At present all large and medium-sized cities possess large suburban areas which are production bases for subsidiary foods. The 'near suburb' is to produce mainly vegetables and subsidiary foods; the 'far suburb' will produce mainly grains, cotton, and edible oil. At the same time, while the 'far suburb' should develop diversification in agriculture: silviculture, animal husbandry and pisciculture, it should put more effort in subsidiary food production than rural areas. Development of these subsidiary food bases not only utilizes fully the manpower, material and financial resources in cities, but it also lightens the burden on transportation facilities, reduces spoilage of vegetables incurred by long distance shipment. Prompt supplies (of vegetables and subsidiary foods) can be guaranteed.[89]

As a consequence of the introduction of these policies, large scale transformation of agricultural land use took place in the near suburbs of the city regions. Many reports from Chinese sources that appeared after 1959, and those from non-Chinese sources thereafter (Table 6.5) revealed the close relationship between the distance from the central city and the type of agricultural activities within the city region.

In general, two levels of agricultural land use planning may be recognized. On a macro-scale a zonal structure of varied intensity of cropping practices emerged. The agricultural zone outside the central city was organized into two major categories of vegetable producing bases. The first agricultural sub-zone in the near suburb (generally within 10 kilometres from the city limits) is classified as a class one vegetable base, producing 70 per cent or more of the vegetable needs of the city. It is a specialized, year-round horticultural

TABLE 6.5 Relationship between Suburban Agricultural land Use and Distance from Central Cities since 1958.

Commune	Location	Major Crops	Minor Crops and Other Agricultural Activities
1 Evergreen	23 Km from Peking	Vegetable and fruit	Wheat, sorghum and millet
2 Red Star	33 Km from Peking	Wheat	Corn, rice, vegetables, fruit, fish, milk, ducks, horse breeding, and fodder crop
3 Kawkang	35 Km from Shenyang (a motor road connects commune with Fuchang and Shenyang	After communization four-fifths of cultivated land turned over to vegetable farming	Upland rice, maize, millet and sorghum, fishery, forestry, animal husbandry, poultry and fruit
4 August First	About 30 Km from Shenyang	Rice (soils more suitable for rice cultivation)	Vegetable and fruit in 12,000 square metres of hot-houses
5 Chingyueh	15 Km from Changchun	Food grains in plain, vegetables in hills	
6 Tsinglungshan	East of Changchun	Food grains. One-third of land under vegetables	
7 Pengpu	13 Km from Shanghai	Vegetables	Some rice, flowers, medicine herbs, mushrooms, dairy products and pigs
8 Hsuhang	50 Km from Shanghai (on an unpaved road)	Rice and wheat	Cotton, rapeseed, broadbeans, soyabeans, garlics, and pig rearing
9 West Lake	15 Km from Hangchow (hilly terrain)	Tea	Rice
10 Tungchun	84 Km from Hangchow	Sorghum and millet (dryland) Rice (irrigated)	

TABLE 6.5 (Continued)

Commune	Location	Major Crops	Minor Crops and Other Agricultural Activities
11 Stonewell	20 Km from Canton	Rice, sugarcane, wheat and vegetables	
12 A	25 Km southeast of Nanking	Rice, wheat and maize	Vegetable and fruit
13 B	50 Km east of Nanking	Rice, wheat, maize and fruit	
14 C	About 12 Km north-west of Shanghai (linked with city by rail)	83 per cent of cultivated area under vegetables. Poultry and dairy produce	
15 Hsintsao	10 Km southeast of Canton	8,250 acres of cultivated land One-third of land under fruit, One-quarter under vegetables	One-sixth under rice
16 Fatung	Estimated at least 100 Km north of Canton	Rice	Groundnuts and fruit
17 D	North and north-east of Canton (located in mountainous terrain)	One-third of upland under fruit Green manure	
18 E	Near Lanchow	Vegetables and fruits (under irrigation)	Wheat, maize, and animal husbandry
19 Shingching	15 miles from the city centre of Shanghai	A wide range of vegetables	Grain, mushrooms, chickens and pigs
20 Hochih	Located at southeastern edge of Wusih	Fruits, vegetables and rice	Fish, milk, and fowl. Trend toward agricultural diversification

TABLE 6.5 (Continued)

Sources:

1-11 Burki, Shahid Javed, A Study of Chinese Communes, (Massachusetts: Harvard University Press, 1965), pp. 50-89.

12-17 Buchanan, Keith, Transformation of the Chinese Earth, (London: G. Bell & Sons, 1970), pp.154-164.

18 _____, "The Changing Face of Rural China", Pacific Viewpoint, vol.1, no.1, March 1960, p.21.

1,2,3 and 9, Birke, Lakew, What I Saw in the People's Republic of China (A travel account of an academic group from the University of Ethiopia), May 1973, p.89 and p.114.

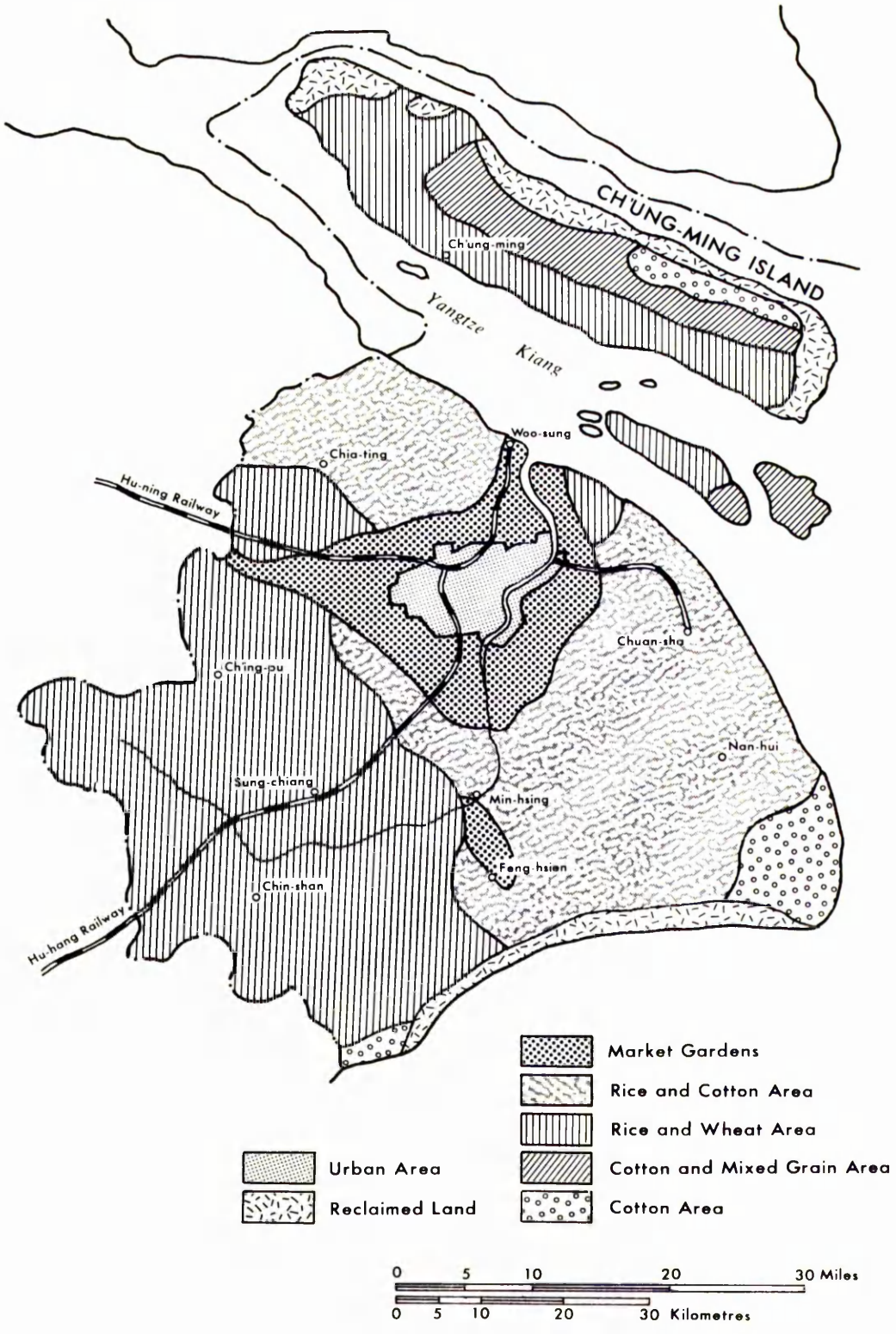
9 and 20 Visited by this writer on 23 and 15 of May 1977, respectively.

area which is intensively cultivated with high inputs of labour and fertilizer, and with mechanical irrigation being practised. The second sub-zone in the far suburb is generally a less intensively cultivated area, producing a major food crop. It is located at a greater distance from the city, and is designated as a class two vegetable base. Within this sub-zone, only some vegetables are grown, either on a year-round or seasonal basis, in areas where the soils are suitable for certain types of vegetable crops. They are interplanted with food grains, or cotton, to maximize use of agricultural land resources. The vegetables grown within this sub-zone are generally the slow growing varieties: garlic, onion and string beans. They are considered as uneconomical when produced in the near suburb, and not as perishable as leafy vegetables.[90] Similar agricultural land use planning was also practised in the suburban areas

of other industrial cities. For example, within the city region of Peking, the suburban areas were subdivided into two concentric zones. The inner zone, known as the "near suburb", accounted for about 7 per cent of the entire city region. It lies immediately outside the new built-up area where a large number of post-secondary schools and research institutes, government buildings, museums, factories and workers' housing projects are located. This entire "near suburb" has been designated as a special agricultural area where vegetables and fruits are grown intensively for the urban market of Peking. The outer encircling zone, known as the "far suburb", covers over 90 per cent of the city region. It has been designated as a supply base for the city's requirements of coal, lumber, construction materials, dairy products, and some grain and water.[91] The city of Shihchiachuang in Hopeh also allotted 60,000 mou (c. 10,000 acres) of cultivated land within a perimeter of 20 li (10 kilometres) from the city for year-round vegetable production. This belt of special agriculture is said to occupy about as much as one-third of all the cultivated land in the suburban areas of the city region.[92] A similar spatial reorganization of agricultural activities is evident in the Shanghai City Region. The new vegetable plots that completely encircle the city's built-up area are cultivated by members of 12 rural communes located on the urban fringe area. Outside this horticultural zone is an area of traditional cereal grains and cotton production (Map 6E). Changes in agricultural land use also occurred at Minhsing, the first satellite town established in the City Region of Shanghai.

MAP 6E

LAND USE MAP OF SHANGHAI CITY REGION



(The development of Shanghai's satellite towns will be discussed in detail in Chapter 8). Originally, prior to the formation of agricultural communes in 1958, only two of the thirty-three advanced agricultural producer's co-operatives located around Minhsing produced vegetables. After the amalgamation of these thirty-three advanced agricultural producers' co-operatives into an agricultural commune, a significant change in agricultural land use took place. This new commune, known as the Machiao Commune, was officially designated by the Municipal People's Committee of Shanghai as the vegetable production base for the rapidly growing satellite town of the city. The thirty-three production brigades of the commune formulated a new plan on agricultural land use. Each brigade established at least one commodity vegetable growing area. Consequently, over 10,000 mou (over 1,600 acres) of the commune's 72,096 mou (c. 12,000 acres) of crop land was converted into market gardens.[93] Available data on values of commodity and self-consuming agricultural produce at the Machiao Commune between 1957 and 1959 (Tables 6.6 and 6.7) reflect several significant developments within the agricultural sectors. During the period, increasing emphasis was placed on production of commodity agricultural produce, to meet the increasing need at Minhsing. There was a decline in the output of major agricultural produce: food grains, cotton, and rapeseed. On the other hand, both subsidiary foods and livestock production, particularly those that were produced for sale at the urban market, recorded phenomenal increases. Production in industry, first introduced in agricultural communes during

the Great Leap Forward movement in 1958, also showed substantial growth. Surrounding the urban area of Ch'angch'un were the communes of Tsinglungshan, Chingyueh, Chinghsi and Tatuen. Between late 1958 and early 1959 the percentage of vegetable growing area increased from 9.9 per cent to 20.4 per cent. By late 1959 the municipal authorities made further efforts to increase the total area of market gardens in the near suburb. Seventeen special districts were set up, in which vegetable fields occupied more than 50 per cent of the area [94] (Photo 6I).

TABLE 6.6 Values of Commodity Agricultural Produce at Minhsing Commune 1957-1959 (in yüan)

	1957	1958	Per Cent	1959	Per Cent
Agriculture	2,732,776	4,182,282	53.04	5,184,435	23.96
Subsidiary Foods	110,000	140,824	28.02	1,505,000	968.75
Livestock	66,000	192,400	191.52	1,033,273	437.04
Industry	-	460,000	-	2,330,000	406.52

TABLE 6.7 Values of Self-consuming Agricultural Produce at Minhsing Commune 1957-1959 (in yüan)

	1957	1958	Per Cent	1959	Per Cent
Agriculture	2,695,200	3,218,780	19.42	3,450,000	7.15
Subsidiary Foods	259,844	280,678	11.87	1,508,335	437.38
Livestock	44,676	82,000	84.21	442,830	440.03
Industry	-	550,000	-	2,330,000	323.62

Source: Chieh-fang jih-pao, (Liberation Daily), Shanghai, 29 December 1959.

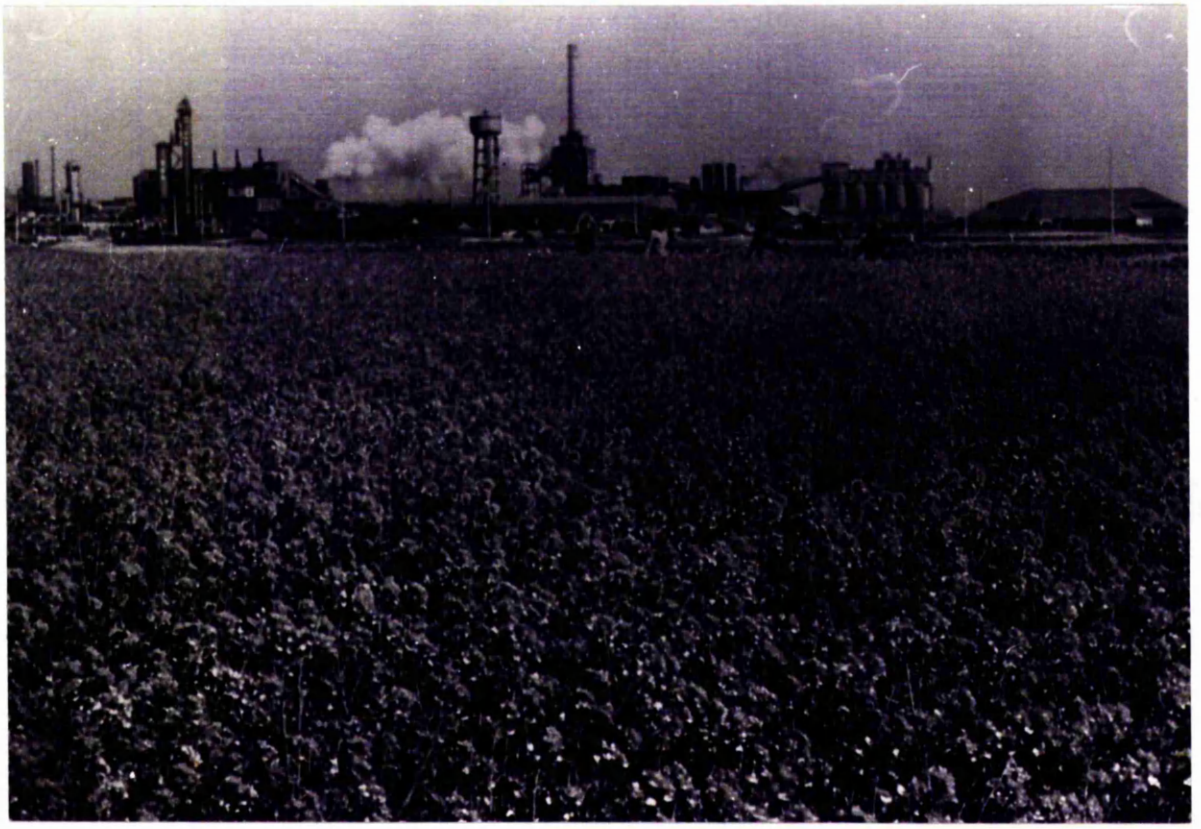
6I. Satellite Imagery of the City Region of Shanghai 1976.

Agricultural Land Use Planning in Suburban Communes

At the time when the urban centred planning units were being set up in large and medium-sized cities, an important development in the socialization of agriculture took place. Since mid-1958, most advanced agricultural co-operatives merged into agricultural communes. This new organization in the agricultural sector facilitated large scale conversion of urban fringe crop lands into market gardens, contributing to the realization of the state policy on achieving self-sufficiency in vegetable supply in cities. These larger units of agricultural organization further promoted better field management, land improvement, rational utilization of capital and manpower. More importantly, the communes made possible efficient use of agricultural land resources. For the first time, the principle of "doing the best according to local conditions, and using land to the best of its advantages" was first introduced. This expression literally means crops of different kinds are selectively grown in accordance with terrain conditions, soil types, and other physical characteristics of the land, so that its production capabilities may be fully utilized. The completion of the nation-wide soil survey at the end of 1959 provided a scientific basis for rational agricultural land use planning.[95] In Shanghai's suburban communes, coba (zizania latifolia) was grown in low swampy areas, vegetables in elevated fields; areas with a low ground water table were used for cotton and wheat, whereas those fields with a high water table for paddy rice and fodder crops; light soil

areas for root crops such as sweet potatoes; and poor soils for fruit trees.[96] At the Machiao Commune outside Minhsing, the types of crop grown varied with the level of ground water table, soil characteristics and distance from factories. When agricultural land use planning was initiated in the summer of 1959, the north-eastern part of the commune was mainly used for wheat, and the southwest for rapeseed. Near factory sites vegetables became the major crop [97] (Photo 6II).

During a tour of China during the months of May and June 1977, the writer visited two suburban communes located in east China. The first one visited on 15 May was the Hochih Suburban Commune outside Wusih. The commune consisted of 4,534 households, with a total population of 15,276. Over 90 per cent of the total land area of 12 square kilometres (c. 17,787 mou) were used for agricultural production: 7,000 mou (c.1,166 acres) orchards, 3,500 mou (c.583 acres) paddy rice, 2,600 mou (c.433 acres) fish ponds, 2,500 mou (c.416 acres) vegetables, and 800 mou (c. 133 acres) mulberry trees. In 1958 the commune became one of the vegetable production bases established at the outskirts of Wusih. It has been a major supplier of subisdiary foods for this medium-sized industrial city. Beginning from 1959, however, the practice of agricultural land use planning brought about diversification of agricultural activities. The distribution of major types of land use in the commune was determined by land capabilities, including primarily both terrain and soil conditions. To make use of the hills lying to the north, over 5,000 mou (c.833 acres) of fruit trees were planted on the slopes. This



6II. Where Industry and Agriculture Meet in the Near Suburb of Shanghai.

large scale tree planting served the multi-purpose of checking soil erosion, production of fruits for the urban market, and realization of the afforestation programme introduced in 1956 on a nation-wide basis. Rice paddies and vegetable plots invariably occupied the flat land. To take advantage of the littoral location, pisciculture was greatly expanded, providing an additional source of food for both the urban residents and the commune members. Oyster culture was also introduced in the offshore area of Tai Hu (Tai Lake). The oyster farming supplied supplementary food for the commune members and artificial pearls for the ornament industry at Wusih. Other sideline production included milk, hog and fowl.

In 1976 the average annual income was 450 yüan per person, and the highest reached 600 yüan. This relatively high level of income has been attributed to agricultural diversification, mechanization and rural industrialization.[98]

To a certain extent, the commune has achieved mechanization in agricultural production. It possesses 33 tractors and 52 rice seedling transplanters, 45 threshers, 28 electrified irrigation stations, 21 motor boats and 6 lorries.

The commune-run industries include five factories and workshops; a flourescent tube recycling factory with annual production of 300,000 units, an iron foundary supplying parts to the fish pond aerator factory in the commune, (both industries use waste materials like scrap metal and used fluorescent tubes collected from Wusih), a machine tool workshop, an electric switch factory, and a

factory manufacturing fish pond aerators for use in the commune, and sale to other rural communes.

The second commune visited, on 23 May, was the West Lake Suburban Commune outside Hangchow. The amount of land owned by the commune was about 40 square kilometres, most of which was hill land, with small pockets of alluvial flats in the valleys occupied by rice fields. Despite the close proximity of the commune to Hangchow and excellent road connection with the central city, (travelling time by motor vehicles between the city and the commune was only about 10 minutes) nearly 90 per cent of the cultivated area in this hilly commune was used for growing "Lungcheng" tea (Dragon well), one of the most famous teas in China. The terrain, the soils, together with the micro-climate in this hilly area provided the best physical environment for successful growing of this particular kind of tea. In the past few years, experiments had been carried out to increase production by transplanting the tea to other traditional tea growing areas in the province of Fukien, but, unfortunately, the final product had an inferior taste and flavour. Hence efforts had been expended by the commune members to increase the tea growing area by cutting terraces on the hillside. A wide expanse of these new fields could be seen lying both at a higher and a lower elevation from the existing tea gardens. The monoculture of tea growing in this suburban commune deviated from the normal pattern of vegetable farming in the near suburbs of cities in China, reflecting the dominating effect of both the physical and economic factors.[99] However, diversification of agriculture,

including livestock raising, pisciculture, silviculture, and production of subsidiary foods such as vegetables and fowls, recently has been given a high priority in the plan for future development of the commune.

Urban and Rural Symbiosis

The spatial reorganization of suburban agricultural land use instituted in the city regions since 1958 revived the urban and rural symbiotic relationship which is traditional to China. Specifically, the establishment of a vegetable production belt around the central city and its satellite communities is significant development towards that goal. By and large, market gardening is a special type of agricultural activity that requires a large labour force, high inputs of fertilizer and irrigation water, special skill, and an efficient transportation system. When vegetable farming is located in close proximity to the industrial city, supply of fresh vegetables to the urban residents can be ensured. At the same time, long distance interprovincial shipment of this perishable agricultural produce, which incurs high shipping costs and over-burdens the inadequate national transportation system, will no longer be necessary.[100] In addition, it may be possible to organize urban residents to lend assistance and support to vegetable production and distribution. These symbiotic relationships have contributed to the success of the suburban market gardens.

Since 1958 most suburban communes that engaged, in different degrees of specialization, in vegetable pro-

duction soon discovered that additional farm labourers were needed to cope with the intensive work involved in the multi-cropping system of vegetable production. According to a survey on farm labourer problems conducted in the Woosung People's Commune at Paoshan County lying at about 15 kilometres to the north of Shanghai, on the average, a farmer was able to cultivate 8 mou of cotton or grain fields, or 3 mou of vegetable land. This difference reflected the labour-intensive nature of vegetable production and explained the current labour shortage at the commune.[101] Special effort was expended to utilize more manpower in vegetable production work. In suburban Chungking, about 190,000 commune members, or about 17 per cent of the total labour force, were engaged in producing vegetables and other subsidiary foods. In general, the proportion of manpower employed in vegetable production varied with the agricultural activities of the commune: it ranged from 50 to 60 per cent in communes specializing in vegetable production, 30 per cent in those producing both grains and vegetables, and only 10 per cent in grain-producing communes.[102] This organization of labour in accordance with agricultural activities, however, was disrupted by the Great Leap Forward, which involved massive mobilization of peasants to build water conservancy projects and to manufacture iron and steel using "backyard furnaces". To solve the labour shortage problem prevailing in suburban communes, especially those specializing in market gardening, cadres, factory workers, students and other urban residents were organized to assist in vegetable

planting, weeding, and harvesting.[103] Often, suburban areas of city regions were designated as destinations for the "hsiafang" (sending down) of cadres, educated youths and non-productive urban residents, serving a dual purpose of dispersing population from the congested cities and relieving farm labourer shortages in both agricultural communes and specialized vegetable producing communes in the city regions. A local press source in Shanghai reported that the city's residents contributed voluntary labour in the suburban communes. Over 120,000 government cadres, factory workers, teachers, students and PLA officers went to communes in various suburban counties of Shanghai to assist harvesting and storing of vegetables, grains and cotton crops. Their destinations ranged from several li to over 100 li from the city limit.[104]

When vegetable plots are located near urban centres, practice of mechanized irrigation becomes feasible, and supply of fertilizer, generally in the form of organic manure or other forms of urban waste, readily available. The Commercial Department at Huhohaot'e, an industrial city in the Inner Mongolian Autonomous Region, gave high priority to supplying chemical fertilizer, and irrigation and drainage machinery to the vegetable producing suburban communes.[105] The Industry, Commerce and Water Conservancy Department of Shihchiachuang supplied the suburban vegetable producing brigades with 247,000 metres of electric wire, 156 electric motors, and 146 water pumps, set up 26 electric power irrigation stations, and sank 178 mechanically operated wells; which helped to enlarge the irrigated acreage

by more than 50,000 mou (c.8,000 acres). The Commerce Department also negotiated with the fertilizer company for all the human manure of the municipality to be supplied to the vegetable growing areas.[106] The availability of these inputs for market gardening would result in increase of yield of vegetable crops, which subsequently ensure sufficient supply of this agricultural produce to urban residents (Photo 6 III).

One of the main reasons for establishing vegetable farms on the immediate fringe of built-up area of cities was to shorten the distance between suppliers and consumers of fresh vegetables, thereby eliminating the need for long distant imports. However, the burden of vegetable deliveries was shifted to the suburban communes which were generally not sufficiently equipped for the task. To solve the problem, the Commercial Department at many cities organized personnel of vegetable consuming units such as factories, mines, and government departments to harvest the vegetable needed and ship them back for their consumption.[107]

Finally, peasants on suburban market gardens were able to obtain from agricultural institutions scientific knowledge on soils, plant breeding, general principles of plant growth and development, and insect and pest control. For example, the Evergreen Commune at suburban Peking invited horticulturalists from the North China Research Institute of Agricultural Sciences to the commune for advice. Commune members also attended classes at the Peking Agricultural College.[108] Application of scientific

6III. Mechanical Irrigation in Suburban Shanghai.

methods in vegetable production inevitably improves the quality and increases the quantity of vegetables for the urban markets (Photo 6 IV).

Agricultural Land Use Patterns in China's City Region versus von Thünen's Circles

The new spatial structure of varied intensity of agricultural activities developed within China's city regions is strikingly similar to von Thünen's concentric ring pattern of agricultural land use around a central city, which he conceived a century and a half ago.[109] When the spatial patterns of land use in the agricultural hinterland of China's city regions is compared with von Thünen conceptual rings, several empirical parallels emerge. Basically, the transportation factor, which von Thünen conceptualizes as a major force creating the patterns of land use and agricultural production in his "Isolated State", plays a key role in the spatial reorganization of agricultural land use in China's city regions. The inadequate transportation system in the country made it impossible to maintain an adequate supply of fresh vegetables to the large industrial cities by means of long distance inter-provincial transfer; this subsequently led to implementation of government policies to establish "vegetable producing bases" around the central city and satellite settlements within city regions. The locational characteristics of these market gardens, in particular, is similar to von Thünen's innermost circle. Furthermore, the decreasing

6IV. Suburban Vegetables Destined for the Urban Market.

intensity of cultivation with increased distance from the central city also matches well von Thünen's theory of varied intensity. It is important to point out, however, that the spatial patterns of agricultural land use in China's urban centred planning units represent a modified form of von Thünen's circles. The forest lands that once surrounded the cities of ancient China have long since been cleared for cultivation, fuel, and other uses. Thus, a zone of forest land is no longer found in close proximity to most of the cities in China. In addition, there is no evidence of a universal presence of a grazing belt in the rural areas of China's city regions.

Two very significant distinctions may be made, however. Von Thunen's proposals as to the type of crop grown at a particular location in relation to the central city is governed primarily by the financial returns to individual farmers in a free economy, and thus his circular zones represent aggregates of individual choices. On the other hand, the use of urban fringe land in China for vegetable production as a special type of agriculture represents an effort of a centrally planned state to maximize efficiency in the use of agricultural land resources and human resources in the city's environs. Also, the production of vegetables in suburban communes is recognized as a political as well as an economic task. Furthermore, it is significant to point out that a number of forces operating in China did not lie at the basis of von Thünen's thesis. Ideological-economic attributes constitute one of the most important determinants in the geographical

location of the special agricultural zone within China's urban centred planning regions. Mao envisaged the creation of a classless society in China. It was his belief that the ultimate abolition of the antithesis between town and country was the basic and essential step towards achieving such a goal. In Mao's view:

> Towns in capitalist society, under bourgeois rule ruthlessly plunder the countryside, and in the Kuomintang-controlled area in China where the town under the rule of foreign imperialists and of the big bourgeois comprador most savagely plunder the countryside, the contradiction between town and country is one of extreme antagonism. But in a socialist country and in our revolutionary bases, such an antagonistic contradiction changes into a non-antagonistic one, and it will disappear in a communist society.[110]

It should be added that one of the major objectives of the socialist transformation of China's industry and agriculture was to uproot the economic basis of the antagonism between urban centres and rural areas, and to forge a close relationship between industrial workers and farm labourers. Indeed, early in 1949 when the Second Plenary Session of the Seventh Central Committee of the CCP was held in Hsinpaipo Village, Pingshan County, Hopeh Province, Mao strongly advocated such symbiosis:

> Attention must be given to both city and village and it is necessary to link closely urban and rural work, workers and peasants, industry and agriculture...[111]

The leadership of the Chinese government realized that industry and agriculture constituted the major departments of material production in the national economy. To speed up the tempo of economic growth for China, it was necessary to promote a close alliance, in the form of

mutual assistance and co-operation, between workers and peasants. The suburban horticultural area would serve as a contact zone between these elements of the socialist society.

CHAPTER 6 - NOTES

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13. Even in 1963, although the Standard Metropolitan Areas of the United States included only 12.5 per cent of all commercial farms, these areas contained 44 per cent of all vegetable farms, 36 per cent of all fruit and nut farms, 22 per cent of all poultry units and 17 per cent of all dairy holdings. These farms rapidly receded in less than a decade. Most regional markets for fresh and perishable agricultural produce became less protective, due to general decline of shipping costs within the total cost structure of agricultural operation. Higbee, (1961), op.cit., pp.269-270.

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18. JMJP, 7 October 1953.

19. NFJP, Canton, 10 October 1955.

20. Kuang-chou jih-pao (Canton Daily), Canton, 3 June 1954; hereafter: KCJP.

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22. CFJP, Shanghai, 18 March 1955.

23. CFJP, Shanghai, 4 March 1955.

24. KCJP, Canton, 11 May 1957.

25. NFJP, Canton, 26 January 1956.

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27. WHP, 20 May 1954.

28. Hsin-wen jih-pao (News Daily), Shanghai, 10 March 1955; hereafter; HWJP.

29. WHP, 9 June 1954, op.cit.

30. NFJP, 26 January 1956, op.cit.

31. Ta-kung pao (Impartial Daily), Tientsin, 18 January 1956; hereafter: TKP.

32. NFJP, 4 August 1956.

33. KCJP, 4 September 1956.

34. Total inundated area during the period from 1949 to 1957 (in million mou)
1949 - 127.87
1950 - 70.65
1951 - 22.14
1952 - 27.66
1953 - 47.97
1954 - 169.58
1955 - 46.09
1956 - 164.87
1957 - 85.02
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42. KCJP, 24 November 1956.

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48. HWJP, 25 October 1957.

49. "Basically Solve the Problem of Vegetable Supply", HHPYK (New China Semi-monthly), no.13, 1957, p.150.

50. HWJP, 4 May 1957.

51. HHPYK, op.cit., p.150.

52. NFJP, 7 August 1956.

53. The Sanyüanli farm is located on the northwestern edge of Canton. It specializes in market gardening. Out of a total acreage of 2,400 mou, 1,300 mou is used for vegetable production and the rest for growing paddy rice. Source: Indian Delegation to China Report, 1956, p.7.

54. KCJP, 27 November 1956.

55. JMJP, 9 May 1957.

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61. HHPYK (New China Semi-monthly), no.13, 1957, p.150, op.cit.

62. WHP, 17 November 1957.

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64. HWJP, 23 September 1957.

65. KCJP, 23 November 1957.

66. JMST, 1956, p.60.

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68. The development of satellite towns in the City Region of Shanghai will be discussed in detail in Chapter 8.

69. Ullman, Appendix D., op.cit., p.42.

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71. WHP, 18 February 1958.

72. CFJP, 20 December 1958.

73. Ullman, op.cit., p.42.

74. Chung-hua jen-min kung-ho-kuo hsing-cheng-ch'ü-hua chien-tse 1960, (Handbook of Administrative Districts of the People's Republic of China), (Peking: Ti-t'u ch'u-pan-she, 1960), p.77.

75. _____, 1965, p.79.

76. China Reconstructs, vol.25, no.3, March 1976, p.7.

77. Ibid., p.9.

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79. Wen Huang-fu, "North China's Largest Reservoir", China Reconstructs, vol.9, no.2, February 1960, pp.6-9.

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82. Chung-hua jen-min kung-ho-kuo hsing-cheng-ch'u-hua chien-t'se, 1960, op.cit., p.9.

83. _____, 1965, p.80.

84. Hungchi (Red Flag), no.14, July 1960, p.16.

85. JMJP, 25 August 1961.

86. JMJP, 21 July 1958.

87. JMJP, 23 December 1958.

88. HWJP, 19 January 1959.

89. JMJP, 30 June 1959.

90. Ta-kung pao (Impartial Daily), Peking, 7 April 1961; hereafter: TKP.

91. Chang Chih-kang, "Wei-ta ti Peh-ch'ing" (The Great Peking), Ti-li chih-shih (Geographical Knowledge), vol.10, 1959, pp.486-7.

92. TKP, Peking, 11 June 1961.

93. CFJP, 29 December, 1959.

94. Anon,, "Yueh-chien-chung ti Ch'ang-ch'un" (Changchun is Leaping Forward), Ti-li chih-shih (Geographical Knowledge), no.11, 1959, p.538.

Note: To-day, visitors to China never fail to see a wide expanse of vegetable plots outside built-up areas of cities. This horticultural zone may be detected on Landsat imagery obtained over China. (Landsat is primarily an earth resource surveillance and remote sensor experiment satellite launched by the National Aeronautics and Space Administration (NASA) of the United States on 23 July 1972. One of the multispectral imaging systems on board is a four-channel line-scanner. Each of the four sensors detects and records radiant energy of selected wavebands within the electromagnetic spectrum. For example, Bands no. 4,5,6 and 7 detect radiant energy within the regions of 0.5-0.6 micron (green), 0.6-0.7 micron (red), 0.7-0.8 micron (infrared), and 0.8-1.1 microns (near infrared), respectively. Both band no.6 and band no.7 imagery are excellent for observation of the land-water interface and leafy vegetation. All waterbodies appear in a very dark tone which strongly contrasts with the light tone of land surfaces, whereas healthy broadleaf vegetation in light tone against the dark toned built-up areas of cities or bare soil).

The market gardens around Shanghai appear in a relatively light tone, in contrast with the dark-toned urban area. It further stretches for about 10 miles along the Soochow Creek to the west of the city. The Landsat imagery over Shenyang also displays an almost continuous belt of market gardens around the industrial city. The major concentration of this type

of agriculture, however, is located on the alluvial plain of Liao River to the southeast of the city. A dam has been built on the Liao creating a large reservoir which provides water to irrigate the vegetable crops. Similar pattern of suburban agricultural land use was detected on imagery obtained over other Chinese cities.

The Landsat imagery interpreted included the following:

City	Date	Ms Band No
1 Nanking	21 April 1977	6
2 Sian	30 December 1973	7
3 Chengchow	14 November 1976	6
4 Paot'ou	25 November 1973	7
5 Wuhan	1 November 1975	6
6 Shenyang	8 May 1977	6
7 Lanchow*	16 December 1973	6
8 Shanghai	21 October 1976	6

* Despite the excellent quality of the imagery over south Kansu, no detail of Lanchow and its fringe areas was visible. This industrial city and the river valley were completely shrouded in a thick blanket of polluted air trapped within the Hwang Ho Valley.

For more information on the Landsat system and satellite image characteristics, see NASA, Earth Resources Technology Satellite Data Users Handbook, (Greenbelt, Maryland: NASA, Goddard Space Flight Center, 1972).

Manual of Remote Sensing, volumes 1 and 2, (Falls Church, Virginia: The American Society of Photogrammetry, 1975).

95. "Three Years of Agricultural Charter", China Reconstructs, October 1961, p.7.

96. CFJP, 29 August 1959.

97. CFJP, 19 December 1959.

98. For a detailed analysis of China's rural industrialization, see Sigurdson, J., Rural Industrialization in China, (Cambridge, Massachusetts: Harvard University Press, 1977), 281p.

99. Members of the West Lake Commune received a relatively high annual earning from tea growing - a monoculture at the commune. The average annual income per household of 2.5 labourers was 1,300 yüan in 1976. Such high income level of the tea growers reflected the economic significance of this particular kind of tea grown mainly for the export market.

100. Promotion of efficient use of the country's transportation system was one of the augments put forward by the writer to explain the need for grain imports after the recovery of agricultural production early in the 1960s. See Fung, K.I., "China's Grain Trade: Explanation and Prospects", The Canadian Geographer, vol.16, no.1, 1972, pp.15-28.

101. HWJP, 3 July 1959.

102. JMJP, 26 May 1959.

103. JMJP, 14 June 1959.

104. New China News Agency, Shanghai, 20 October 1958;hereafter NCNA.

105. NCNA, Huhehot, 5 July 1959.

106. Joint Publications and Research Service No.4278, (Washington, D.C., 1962), p.7.

107. JMJP, 28 October 1959.

108. Li Mo-lin, "Growing Vegetables for Peking", China Reconstructs, April 1963, p.30.

109. Hall, P. (ed.), Von Thunen's Isolated State, op.cit.

110. Kao Cheng-sheng, "New Type of Urban-Rural Relations in China", Peking Review, no.13, 29 March 1963, p.19.

Note: Apparently Mao's idea on eliminating the differences between city and country stemmed from that postulated by Engels. See: Engels, Frederick, Anti-Duhring, English edition, (Moscow: Foreign Languages Publishing House, 1954), pp.385-386.

111. Mao Tse-tung, Selected Works, vol.4, op.cit., p.363.

CHAPTER 7

TRENDS IN URBAN DEVELOPMENTS IN POST-1949 SUBURBAN SHANGHAI

Introduction

This chapter presents a case study of the patterns of spatial growth and related suburban development of a major Chinese city during the period 1949-1957, mainly within the context of central government policy changes. Shanghai has been chosen for the following three major reasons: first, and most important of all, the availability and reliability of local materials on Shanghai are superior to those of any other Chinese cities, although comprehensive quantitative data for the city are still lacking. Secondly, in terms of the contemporary history of urban development, Shanghai is vastly different from most of the other industrial cities in the nation. Thus the study of the spatial development of this metropolis and its environs is a subject of great comparative interest. Thirdly, despite the fact that three decades have elapsed since the establishment of the communist government in China, there is still a general scarcity of geographical literature on post-1949 Shanghai.[1] From this point of view it would be academically worthwhile to undertake a study of this world city, despite the relatively limited scope of the investigation.

Since the 1930s Shanghai had already emerged as China's largest city, both in spatial and population terms, and the nation's greatest economic centre. It held a supreme position in modern manufacturing, commerce, banking and

foreign trade before the present government came into power. Because of its favourable geographical location, the city commands one of the world's most extensive, rich, and populous hinterlands, including the entire middle and lower reaches of the Yangtze Valley. Like most Chinese cities, Shanghai is situated on level terrain, the physiography of the Yangtze deltaic plain and its alluvial materials providing an excellent site for the city's outward expansion. Theoretically, the favourable geographical location and physiographic factors, and industrial inertia offer great potential for rapid economic and urban growth of this great city when the communist government actively launched its industrialization programme during the 1950s. It is against such a background that the nature and patterns of Shanghai's spatial growth will be examined and analysed.

The Geographical Setting of Shanghai and Its Surroundings

The huge delta of the Yangtze is clearly divided by the river into two major regions: the north and the south. The Shanghai deltaic plain occupies the southern portion, and possesses a peculiar physiographic characteristic. Unlike most deltas, this part of the Yangtze delta does not slope towards the river mouth. Instead, it resembles a half saucer tilting gently upstream. In terms of microrelief, the Shanghai deltaic plain consists of three units. The eastern part, primarily composed of the shoreline zones along the north, east and south of the delta, lies at about five metres above mean sea level. The central part, which is occupied mainly by both banks of the Hwangpoo Kiang, is about one

metre lower than the eastern part. The western part, the lake district, has an average altitude of only about two and a half metres above mean sea level.[2] The deposits that underlie the delta consist mainly of gravel, coarse sand, fine sand, silt and clay with scattered thin layers of scoria and marine shells. The stratigraphy of these materials furnishes important clues to the geological and geomorphological history of the Shanghai area.[3]

The delta area also includes three major islands: Ch'ungming, Chianghsing and Hwangsha; all formed by alluvial deposits brought down by the Yangtze. The Island of Ch'ungming ranks largest of the three, having an area of 1,083 square kilometres. Hwangsha Island is the smallest with an area of only 42 square kilometres.[4] These islands divide the Yangtze estuary into three separate channels.

The major stream of the Shanghai deltaic plain is the Hwangpoo Kiang which originates from Tai Hu (Tai Lake) to the west. It empties its water into the Yangtze near Woosung. From its source, the river flows in a west-east direction, but turns sharply northward about seven kilometres below the town of Minhsing. This abrupt change of direction of flow is attributed to the slightly higher relief of the eastern part of the delta which has been described above. The major tributary of Hwangpoo Kiang is the Soochow Creek, also known as Woosung Kiang in the early days. This originates from Tai Hu and flows in a predominantly west-east direction. The confluence of Soochow Creek and Hwangpoo Kiang is located at Hwangpoo Park in Shanghai, and it physically divides the city into three parts. Besides these major waterways, the Shanghai deltaic plain is traversed

by numerous natural and artificial channels, forming a dense network.[5] Murphey estimates that the delta contains at least half a million miles of canals and artificial waterways.[6] These channels provide drainage for the low deltaic plain, irrigation water for agricultural development on the fertile soils developed from the alluvial deposits, domestic water supply, and a convenient network for the movement of people and goods throughout the region.

The Shanghai deltaic plain and the major islands to the north are located within a zone bounded by 119° 0' and 121° 50' longitude east and 30° 45' and 31° 50' latitude north. The climate is subtropical - warm and humid. The annual average temperature is 15.6°C and the annual average precipitation 1151.6 millimetres[7] (Caf in Trewartha's Classification). Further, because the region is located on the east coast of continental Asia and in a convergence zone of cold, dry and warm, humid air masses, its climatic pattern is influenced by both the Asiatic Monsoons and by temperate cyclones. The seasons in the Shanghai region are quite distinct. Generally, summer and winter are longer than spring and autumn. The weather in spring is warm but unsettled. Summer is the hottest and the wettest part of the year. The average temperature is about 30°C, and the average rainfall 150 millimetres. Autumn is short, but the weather sunny and pleasant. Winter is the longest and coldest season of the year. The average temperature generally drops below 10°C, and occasionally invasions of cold air masses from the north may reduce the temperature to -5°C. The rainfall in the Shanghai delta area, though

not excessive, may be described as fairly abundant. Most of it is brought by typhoons which occur at rather frequent intervals throughout July and August. Snowfall in winter is infrequent.[8]

Because of the favourable terrain, fertile soils, ample water supply and equable climate, as well as the presence of a large local market, the delta area of Shanghai has become one of the most highly commercialized agricultural regions in East China. The dominant crops in the region include rice as a staple grain crop, and mulberry and cotton as economic crops grown mainly for Shanghai's textile industry.

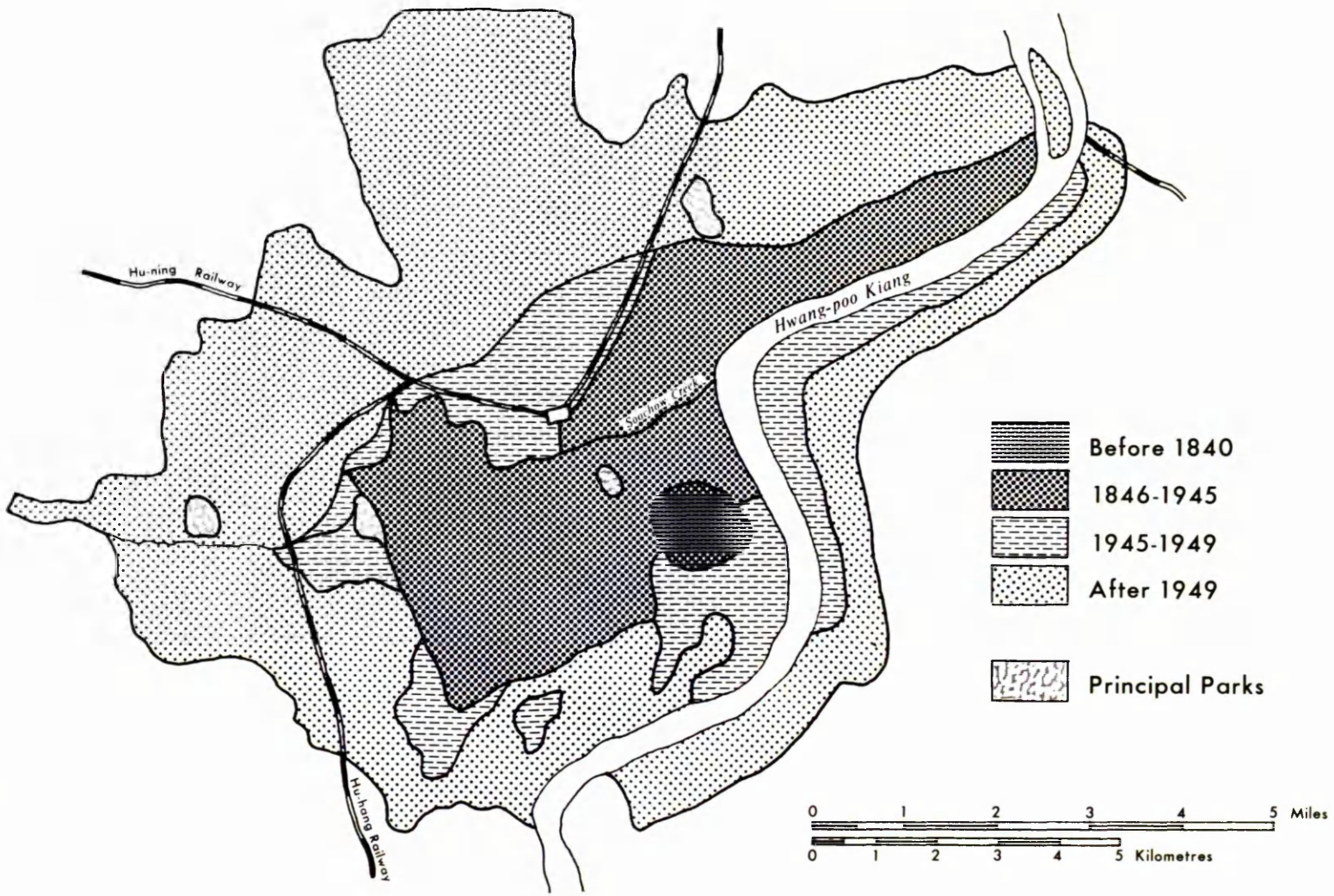
While the natural advantages of the geographical location of Shanghai have contributed to the city's economic development, the physiographic elements of the deltaic plain have played an important part in the city's spatial growth. The level terrain and alluvial materials of the delta provide excellent physical conditions for urban development. The city has grown rapidly outwards in all directions since it was established as one of China's five treaty ports by the western powers in 1842. Through mainly accretional expansion of foreign settlements and further development when the city was under Japanese, then Nationalist rule, Shanghai expanded from a small walled settlement of about three miles in circumference[9] to an urban centre of metropolitan dimensions. At the time of the communist take-over early in 1949, the city's built-up area covered about 80 square kilometres.[10] By 1957 the total urban area had increased to 116 square kilometres, due to another major

accretional growth.[11] Within the following two decades, the built-up areas of the central city expanded only at a moderate rate. This reflects the government's effort to disperse the city's population and manufacturing industries to satellite towns within the city region created early in 1958 and greatly expanded late in the same year. In 1977 the total area of urban Shanghai was about 140 square kilometres, and at this point in time, it was part of official urban planning policies that further expansion would be strongly resisted [12] (Map 7A).

Imperialist Shanghai to Socialist Shanghai

After the capture of Shanghai by communist forces on 25 May 1949, the Shanghai Military Control Commission was set up as an interim government for the city. General Chen Yi, director of the Commission and first mayor of post-1949 Shanghai, was preoccupied with restoring civil order in the city. Administrative offices were instituted in the urban districts to replace the pao-chia system, a low level administrative device with police control based on household registration in local districts introduced by the KMT.[13] Another major concern of the new leadership was to resume industrial production and to rehabilitate other economic activities crippled by wartime chaos and spiralling inflation. Concurrently, measures were taken to stabilize food supply for the city's five million inhabitants. The military administration imported nearly four million catties (c.2,000 metric tons) of rice from other

TERRITORIAL EXPANSION OF URBAN SHANGHAI



MAP 7A

provinces and localities: 800,000 catties (c.500 metric tons) from central China, two million catties (over 1,000 metric tons) from northeast Kiangsi, and one million catties (c.600 metric tons) from Nanking.[14] In 1951 a substantial amount of grains was shipped to the city from Szechwan.[15] To reduce food consumption the Commission took steps to return the city's refugees to their original homes. Unproductive residents in the city, including prisoners, thieves, vagabonds, prostitutes and heroin addicts were sent to labour reform camps established in the Tungtai Reclamation Area in northern Kiangsu.[16] The unemployed were mobilized to leave the city to take part in agricultural production in rural areas, or to participate in land reclamation in other provinces.[17] According to the Civil Administration Bureau of Shanghai, organized emigration had reduced the city's population by 413,427 persons early in 1950.[18] During these early years the government also endorsed relocation of Shanghai's factories to Manchuria and central China. At the First People's Congress of Shanghai held in August 1949, one of the resolutions adopted was to encourage factories to move inland, in order to reduce over-concentration of industries in the city, and to lessen the impact of the Nationalist's naval blockade that induced shortages of raw materials and fuels.[19] The energy consuming industries, like glass works, were urged to move to Harbin and Shenyang in northeast China where hydroelectric power was abundant and relatively inexpensive. Textile mills and tobacco factories, made up a significant proportion of Shanghai's manufacturing industry, were offered incentives and

financial assistance to relocate in Honan and Hopeh by both the central authorities and the government of the former recipient province.

In January 1950 the Department of Railways first introduced a preferential railway freight rate to encourage existing industries located near the coast to move to the interior areas. The rates were reduced by one half for industrial equipment destined for the following designated areas: urban centres along the Peking-Hankow Railway, and areas to the west of the line; central China, areas to the west of the provinces of Kiangsi and Anhwei; and south China, areas to the north of Kiangsi, Hunan and Kweichow.[20] The provincial government of Honan provided special financial assistance to Shanghai industries that agreed to move to the province. The "Preferential Treatment for Factories and Relocating Industries from Coastal Areas" regulation was specially enacted for the purpose. The document stipulated that the People's Government of Honan would assist industries by purchasing or renting land for factory construction, within designated industrial districts in the province. Tax incentives were also provided. All relocating industries from coastal areas were exempted from property tax for a period of three years, and from business or industrial tax for three months to one year. In addition, the People's Bank of Honan Province provided loans to relocating industries, allowing an extended period for repayment.[21]

Since February 1950 the bombing of Shanghai by the Nationalists appeared to have made the dispersal of

Shanghai's factories more imminent. The air raid on 6 February, 1950 proved to be the most devastating. A number of industrial and residential districts in the metropolis were levelled to the ground. The destruction of the Shanghai Power Company brought industry and communications in the city almost to a complete halt.[22] Despite these disruptions, few industries responded favourably to the dispersal plan. From February to May of 1950 less than fifty factories moved out of the city; these were mainly small sized consumer industries producing tobacco, cotton textile, match and pencils.[23] Thus the industrial capability of Shanghai was left intact. With the return of law and order and the practice of austerity, the economic conditions in the city began to show signs of improvement in mid-1950. Already by 1952 the total industrial output of Shanghai had exceeded the peak pre-1949 level.

In October 1949 an editorial in the People's Daily, the official organ of the CCP, expressed appreciation of Shanghai's potential contributions to the nation's economic development:

> ... during the last three decades, Shanghai developed into the nation's major focus of industrial and commercial enterprises, the largest centre of cultural activities and publishing business... We resolve to utilize what had been a base originally founded by imperialism for its own benefit and transform it into a new base of large scale public-owned and public-operated industrial and commercial enterprises under New Democracy.[24]

Indeed, the new leadership had made firm commitment to transform Shanghai into a truly prosperous new people's city, despite their knowledge of its past prosperity which was largely founded on bureaucratic capitalism, western

imperialism and the comprador system. By and large, the socialist transformation of Shanghai involved conversion of consumer industries such as cigarette factories into manufacturing plants producing farm tools or electrical machinery. In particular, great emphasis was placed upon the renovation of and unified planning for the existing built-up areas in accordance with socialist concepts and principles.

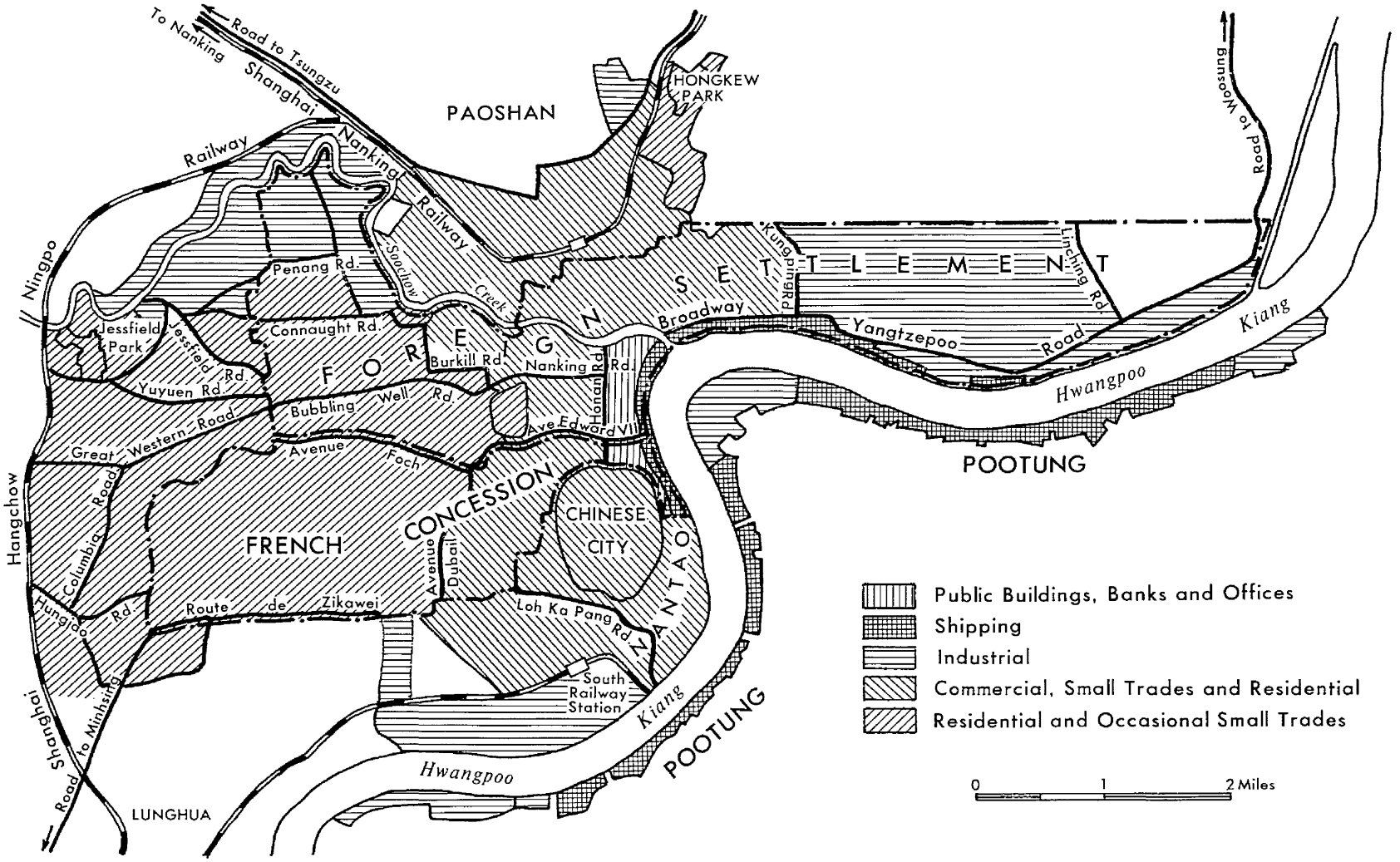
Urban Renovation and Reconstruction: comparison between Peking and Shanghai

During the 1950s urban renovation work on a substantial scale was undertaken in many existing cities. Urban streets were widened and many slums cleared. Impressive progress was made in sanitation work and installation of piped water systems. In some cities the urban transformation process entailed changes of existing land use patterns. For example, to create a city centre in Peking in accordance with socialist concepts, the urban renovation scheme of the nation's capital greatly enlarged the existing Tien An Men Square by removing the retail stores around it. The Imperial Palace Museum that opened onto this expanded city centre was symmetrically flanked on both sides by the Great Hall of the People and the Museums of the Chinese Revolution and Chinese History. Ch' angan Street, the 20 kilometre-long east-west axial road passing through Tien An Men, was widened into a sixty metre thoroughfare, lined by numerous large public buildings.

A new commercial area was created near the Peking Railway Station in Chien Men.[25] Renovation work of comparable scale also was carried out in Shanghai, a city not designated for active industrial development in the First Five Year Plan. The metropolis, being a creation of several foreign powers, lacked the systematic physical layout of grid-iron street pattern, typical of Chinese dynastic cities such as Peking and Sian. During the course of development and expansion, the city was governed by three different administrations: the Municipal Councils of the International Settlement and the French Concession, and the Government of Greater Shanghai. For almost a century the city grew of its own accord without any coordinated planning by the three governing bodies. Much of this haphazard growth was evident from the randomly spaced, narrow and winding streets. Only within the central business district occupying the 1843 British Settlement, were the streets laid out in east-west, and north-south pattern; for the rest of the city, including the External Road Area, all the roads ran in a predominantly east-west direction as the International Settlement and the External Road Area spread mainly westward. After liberation top priority was given to improving the urban transportation network, including straightening and widening of roads, construction of north-south thoroughfares, and renovation and construction of bridges spanning over the Soochow Creek.[26] A chaotic land use pattern had evolved from the unplanned growth of the city. Along both banks of the Hwangpoo Kiang, within the city's built-up areas, lay a belt of

shipping establishments, factories, wharves, slums and warehouses. Small trade-cum-residential quarters extended well beyond Hongkew Park in the north, and embraced practically the entire western part of the International Settlement, and all of the French Concession. Within the major industrial areas of Chapeh, Mantao and Pootung, factories intermingled with high density and squalid dwellings. Only the central business district in the vicinity of the Bund showed a distinct concentration of large commercial enterprises and financial institutions.[27] (Map 7B). On 19 September 1951, the Urban Construction Committee of Shanghai, the first urban planning and construction authority in the People's Republic, was established. It initiated study of the city's population characteristics and urban land use patterns. The assembled data were to be used as the basis for the general planning and development of urban Shanghai. Meanwhile the immediate task of the Committee involved the transformation of the existing intermixture of factories and dwellings into spatially distinct zones of industrial and residential land use.[28] The 400 mou (c.67 acres) race course built by the British during the treaty port days was converted into a municipal central square, named the People's Square, and one of the city's largest recreational ground, known as the People's Park. To improve the living environment, the Committee began development of more municipal parks within the existing built-up areas. Another major assignment of the planning authorities involved removal of nearly two hundred shack areas scattered within the old industrial districts of Chaochiapin and Chuchiahui.[29] (Photo 7I).

LAND USE MAP OF SHANGHAI



7I. An Urban Renewal Area in Shanghai.

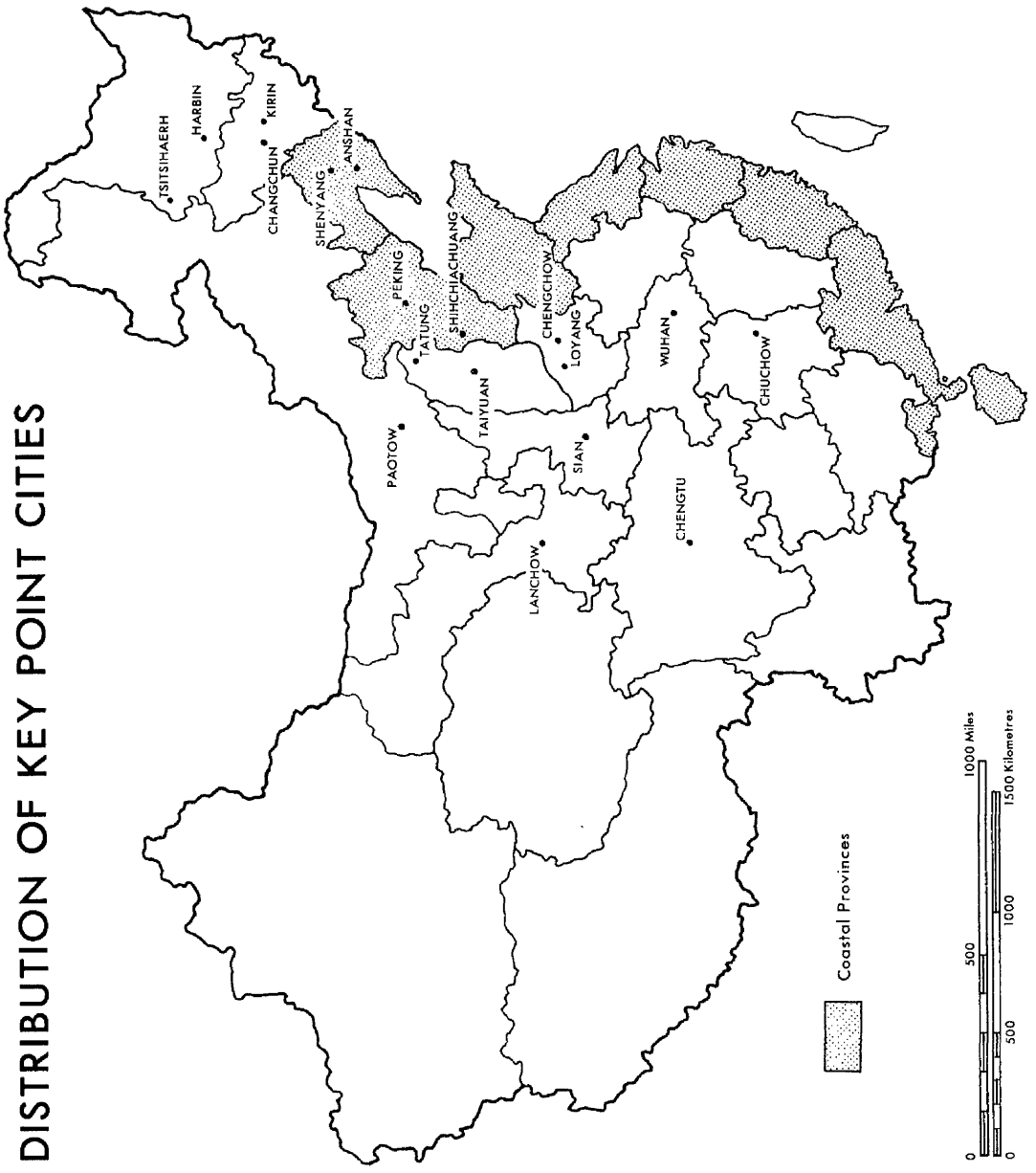
Spatial Developments in Shanghai 1949-1957

Two key policies relating to national industrial development issued by the central government exerted a far-reaching impact on the pace and character of the spatial growth of Shanghai and its surroundings. The First Five Year Plan to be launched in 1953 placed special emphasis on developing industries in the interior to transform the traditional unbalanced distribution pattern of China's economy. Another policy, officially adopted in August 1954, classified all cities into three major categories in accordance with the degree of relevance to industrial and urban development during the First Five Year Plan period:

> In concrete terms, efforts must be concentrated in the development of new industrial cities where important industrial projects are to be located. Such cities previously had no industrial foundation. Now that large scale modern industries are being built, the construction of public utilities and facilities typical of modern cities must be undertaken to complement them. Cities in this category necessarily are the central focus in our urban development work. Next are the modern cities that have already acquired a certain industrial base. The present plan is to augment the existing factories and to build new factories in these cities. Cities in this category must be placed second in our nation's urban development scheme, and be redeveloped and expanded in accordance with industrial growth. With regards to several large cities and most medium and small cities where industrial construction is minimal during the First Five Year Plan period (1953-1957), new projects are, basically speaking, not to be undertaken, even though such cities still possess many unjust conditions inherited from the old society and, in a number of ways, cannot satisfy the material and cultural needs of the people. In these instances, only maintenance and repair work can be allowed.[30]

These policies led to remarkably different spatial patterns of development between cities in the three categories. Because of the construction of a large proportion of new industrial projects at key-point cities (those belonged to the first category in the classification), rapid territorial expansion took place in all these new industrial bases (Map 7C). As discussed in Chapter 5 of this study, large scale encroachment of surrounding suburban areas of these cities by municipal and industrial construction became a commonplace phenomenon. As early as 1950 suburban villages as well as large tracts of agricultural land outside the city of Sian in Shensi province were expropriated for immediate construction of industrial districts.[31] According to the suburban development plan proposed by the municipal government of Sian, the city's major industrial area and workers' villages were to be built in the western suburb, and a cultural and educational area was to be located in the southern suburb. The urban transportation network would be extended to all these new developments, linking the commercial, industrial and residential areas together.[32] In the city of Chengchow in Honan province, another key-point city in the interior, 90 square kilometres of land outside the existing urban area were developed for industrial use.[33] Peking, as the nation's capital and key-point city, received the nation's lion's share of urban construction projects. From 1949 to 1957 the land use patterns outside the city walls underwent very rapid changes. The city expanded practically in all directions, particularly toward the west, northwest and east, along

MAP 7C


DISTRIBUTION OF KEY POINT CITIES
TSITSIHAERH
HARBIN
KIRIN
CHANGCHUN
ANSHAN
SHENYANG
PEKING
TATUNG
SHIHCHIACHUANG
CHENGCHOW
LOYANG
WUHAN
CHUCHOW
PAOTOW
TAIYUAN
SIAN
CHENGTU
LANCHOW
Coastal Provinces
0
500
1000 Miles
0
500
1000
1500 Kilometres

arterial transportation lines. Over 200 square kilometres of suburban land immediately outside the city walls was reserved for municipal construction purposes.[34] In 1952 building of workers' housing projects began in the districts of Shihchingshan, Ment'oukou, Ch'anghsint'ien, Peifeng and outside the West Gate. Early in 1953 the Municipal Planning Committee completed a plan to develop the capital into a political and cultural centre as well as a highly industrialized metropolis. The beginning of the First Five Year Plan period witnessed construction of the cultural-educational areas of the eastern suburb and the industrial districts in the eastern suburb and in the northeastern suburb.[35] Another ambitious project involved the development of 150,000 mou (c.25,000 acres or 34 square miles) of land in the northwestern suburb, an area equivalent to over one and one-half times that within the walled city of Peking itself, into a scenic wooded area. This newly developed area was designated primarily for recreational use and construction of workers' living quarters.[36]

In contrast, the scale of expansion of built-up areas in Shanghai, a city belonged to the third category in the official classification of urban centres, was slow relative to that in key-point cities during the first half of the First Five Year Plan period. The Urban Construction Committee of Shanghai abandoned the Kiangwan Civic Centre Scheme that had been proposed and partially completed by the KMT regime before 1949. Instead much effort was expended on land reform work in the suburban area. In July 1949 ten districts surrounding the city were organized into a single suburban administrative area.[37]

After a brief period of experimentation in selected suburban townships, the land reform programme was initiated in mid-November 1950 and completed in November 1951. About 184,000 mou (c.48 square miles), or almost one quarter of the total land area in suburban Shanghai, was confiscated or expropriated.[38] As stipulated in the Suburban Agrarian Reform Law most of this land was reserved for future municipal expansion and industrial development of the metropolis, but only a very small portion of this reserved land was actually put into non-agricultural use in the early 1950s. Two major urban developments were undertaken in suburban Shanghai which contributed to the expansion of the city's built-up areas during the period. These included the relocation of specific types of industry from the urban area and the construction of workers' villages at the urban fringes.

In February 1950 a disastrous explosion occurred in Fu Hua Match Factory located in a densely inhabited section of Peking, which caused over five hundred casualties, and the destruction of two thousand homes. The Government Administrative Council immediately issued a directive, instructing all municipal governments to remove from urban areas all factories involving raw materials of a noxious, poisonous or explosive nature as well as warehouses storing similar types of materials. It was vehemently urged that such industries should be relocated in open spaces outside the cities.[39] The Shanghai municipal authorities took immediate steps to move about one hundred chemical plants and small workshops handling or producing

inflammable materials from the densely settled industrial districts within the city to the less populous suburban areas.[40] The appearance of chemical factories beyond Shanghai's city limit initiated the transformation of land use in the suburban areas of the metropolis.

After the establishment of the communist administration on the Chinese mainland, the provision of housing for factory workers was considered to be an urgent task by the central authorities. Thus, even before the initiation of industrial development, large-scale construction of "villages" for industrial workers had already taken place in old industrial cities as well as new industrial bases in the interior. In 1952 and early 1953 workers' housing projects mushroomed in Shanghai, Peking, Wusih, Tsinan, Tsingtao, Hangchow,[41] Shenyang, Chungking,[42] Canton, Swatow,[43] and Ch'engtu.[44]

Because of the availability of reserved land for municipal and industrial construction in suburban areas after the suburban land reform, and in anticipation of large scale urban expansion, nearly all these new workers' living quarters were erected outside the city limits.

In order to alleviate the high population density problem and to improve the living environment of factory workers in urban Shanghai, the Urban Construction Committee selected sites in peripheral areas outside the city boundaries for building Shanghai's first group of workers' villages. This housing development project, the largest ever undertaken in the history of Shanghai, consisted of 20,000 units for workers' living quarters, dispersed among nine

separate sites. Ten thousand dwelling units were concentrated in northeastern Shanghai, and the other 10,000 units in northern, western, and southern Shanghai (Table 7.1).

TABLE 7.1 Distribution of New Workers' Villages in Shanghai, 1952.

Site Number	Name of Housing Projects[a]	Number of Dwelling Units	Location
1	Ch'angpei	3,500	Futung
2	Kungch'iang	3,000	Futung
3	Fengch'eng	1,100	(east Shanghai)
4	Anshan	2,310	
5	Chinchuan	4,000	Taichiang (north Shanghai)
6	Yeechuan	1,000	Chenyu
7	Tsaoyang	3,000	Hsinch'ing (west Shanghai)
8	Tienshan	1,000	
9*	Jihuei	1,000	Nanhsi (south Shanghai)

* Jihhuei New Village was located at the southeastern part of Sui Hui District inside the city.

Source: Hsin-wen jih-pao, Shanghai, 29 October 1952.

a Shang-hai-shih shih-ch'ü chiao-tung-t'u (Map of Communication of Shanghai Municipality), July 1976. Edited and drawn by the Surveying Team of the Shanghai Municipality City Construction Bureau. (Shanghai: Shang-hai jen-min ch'u-pan-she, 1967).

These housing projects comprised integrated community facilities such as living quarters for workers and their dependents, schools, day-care facilities, markets, clinics, public bath houses and other public amenities.[45] To elimin-

ate long distance travel by workers between the place of residence and factories, all the new villages were located in close proximity to the existing industrial districts of Yangpoo, Yunin, Pootao, Chapeh, Ch'angning and Luwan located within the city (Map 7D). For example, Tsaoyang New Village, located at Chenyu District, is only about one kilometre from the factory areas in Pootao.[46] The siting of these large housing estates for workers seems to have followed the Soviet model of placing workers' housing at close proximity to factories. Their construction was the most extensive urban development project in post-1949 Shanghai, and contributed to the city's major spatial growth during the first half of the First Five Year Plan period.

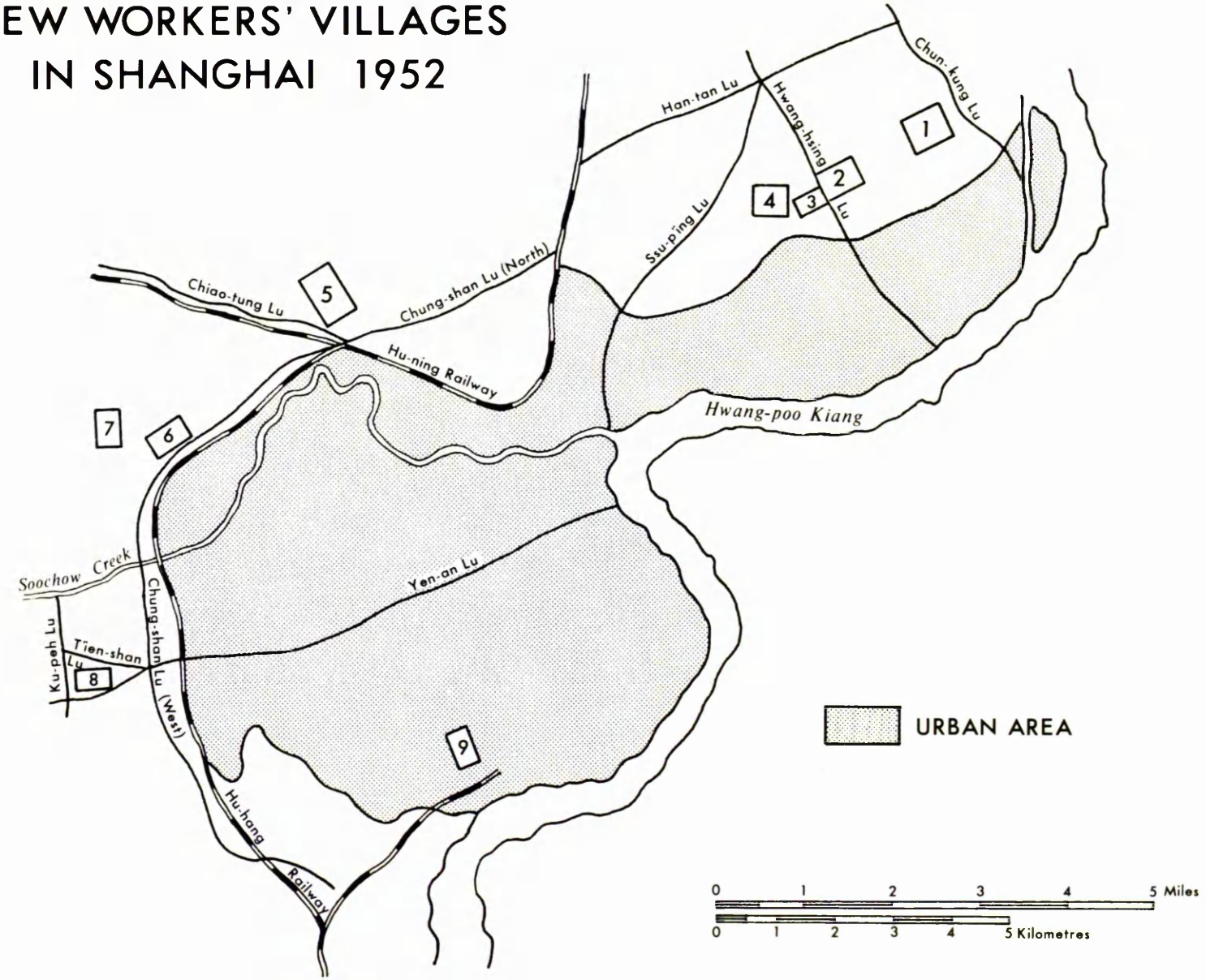
New Phase of Development in Suburban Shanghai

The closing years of the First Five Year Plan period witnessed an abrupt revitalization of Shanghai's industrial growth and significant changes in the structure of the city's modern manufacturing industries, which had an important implication for the spatial development in the suburban areas of this largest industrial centre in China. The primary force behind these new developments was the modification of the nation's regional industrial policy in the spring of 1956.

Geographical Constraints in the Development of China's Inland Regions

It was the intention of the Chinese leadership to

NEW WORKERS' VILLAGES IN SHANGHAI 1952



build up a modern and large heavy industrial base in the sheltered interior regions, as stipulated in the First Five Year Plan. With the technical and material assistance of the Soviet Union, the Chinese planners hoped to transform the existing irrational distribution pattern of the nation's industry.

Unfortunately, the severe geographical constraints impeding the rapid industrialization of the interior regions had been overlooked. Even when industrial development in the inland areas was already in progress, the planners had no knowledge of the resource base of the designated key-point cities. According to an official source, even construction materials such as stone, sand, bricks and tiles for building factories at Lanchow and Sian had to be imported by rail from other provinces as they were not available locally.[47]

Another hindrance to the development of the remote interior had been the absence of an efficient modern transportation system. As early as the end of 1949, nearly 22,000 kilometres of trunk lines, or over 82 per cent of the existing trackage, were already in operation.[48] However, the geographical distribution of these railways was uneven; 77 per cent concentrated in the developed regions of Manchuria and the coastal provinces, whereas only 23 per cent in the undeveloped regions of the interior.[49] When the period of national rehabilitation came to a close at the end of 1952, a number of trunk lines of economic importance located in the inland areas was completed. They included the Tienlan Railway linking Tienshui and Lanchow in Kansu

province,[50] the Ch'engyü Railway connecting Ch'engtu and Chungking in Szechwan province,[51] and the Laimu Railway connecting Laipin and Munankuan in Kwangsi Chuang Autonomous Region.[52] By the end of 1955 nearly 6,000 kilometres of new lines were added.[53] Although nearly all these new railways were located in the inland regions, still, the uneven regional distribution of railways had not been altered. Further, the volume of freight carried by rail had been increasing steadily from 1950 onward, an inevitable impact of the vigorous industrialization programme (Table 7.2).

TABLE 7.2 Volume of Freight Carried by Railways 1949-1956
(in million metric tons)

Year	Volume of Freight	Per Cent Increase
1949	55.89	-
1950	99.83	79
1951	110.83	98
1952	132.17	136
1953	161.31	189
1954	192.88	245
1955	193.76	247
1956	246.05	340

Source: Adopted from Wei-ta ti shih-nien (The Ten Great Years) op.cit., p.129.

Despite the increase of trackage, the railway system still was not able to cope with the increase of volume of industrial equipment and machinery, and construction materials to be transported from the coastal regions or the northeast to the new industrial bases in the inland areas.

Further, many of the urban centres in the inland areas selected for large scale development belonged to the first category of the official classification of cities (see

page 310). These were primarily trading centres in pre-1949 China and had no industrial foundation. None of them possessed modern water supply facilities or sewage systems. Existing power supplies as well as roads within the urban areas of these cities were far from adequate for modern industrial development. Absence of basic urban infrastructures and shortage of public utilities in these designated key-point cities necessitated substantial investments for their construction and installation. The need to diversify the already scarce capital to convert the traditional cities into modern industrial centres inevitably would slow down the rate of economic development and growth.

Impact of Shanghai's Industry on National Economic Development

The larger yield in the value of industrial production of existing coastal industrial centres despite low level of capital investment, and their significant contribution to the nation's industrialization programme during the first three years of the Plan period must have influenced the planners' decision to revise the regional development strategy.

A comparative study of the data of the three major industrial centres of the coastal region substantiates the importance of Shanghai (Table 7.3). Between 1949 and 1955 the value of the industrial production of Shanghai ranged from about one-fifth to one-third of the total amount, far exceeding the total value of Tientsin and Peking combined.

TABLE 7.3 Values of Industrial Production of the Three Major Coastal Industrial Cities and the Interior and Coastal Regions 1949-1956 (in billion yüan).

Location	1949	1952	1953	1954	1955	1956
Shanghai	3.6	6.6	8.8	9.5	9.1	-
Tientsin	0.7	1.8	2.5	2.8	2.9	-
Peking	0.2	0.8	1.1	1.2	1.4	-
7 coastal provinces[a]	3.9	10.5	13.3	15.6	17.1	-
Interior[b]	2.4	7.3	9.9	12.5	14.3	18.83
Coastal	8.4	19.7	25.7	29.1	30.5	39.83
Total	10.8	27.0	35.6	41.5	44.8	58.66

Sources: "Several Problems of China's Socialist Industrialization", Hsin-hua pan-yueh-kan (New China Semi-monthly), no.1, January 1957, p.68.

Yang Hsing-wen, "Two Problems of Industrial Distribution", Chi-hua ching-chi (Planned Economy), no.8, August 1957, p.13.

a See Map 7C.

b Excluding Manchuria.

In addition, the same table shows that the coastal region claims a larger share of the total value of industrial production in China.

Shanghai, in particular, ranked first in China as supplier of a wide range of high-quality industrial goods which were vital to industrial expansion both in the developed region and the undeveloped region. It was revealed that Shanghai supplied a substantial amount of industrial equipment and machinery to Anshan, the largest iron and steel centre in northeast China. These included electrically operated cranes, ore crushers, ore-dressing machines, vacuum

filtering machines, steam turbine generators and high voltage transformers. It also provided steel sluice gates weighing 3,000 tons apiece for the reservoirs, navigation locks and dams of the Huai River Project in Kiangsu province, and the Kuanting Reservoir Project located in the northwest of Peking.[54] Numerous items of industrial equipment installed in the First Motor Vehicle Plant at Ch'angch'un in Kirin province, and the petroleum refinery in the remote northwest also came from Shanghai.[55] Since 1953 sixteen large cotton mills and thirty large weaving factories had been delivered to eighteen provinces and cities, such as Kansu, Sinkiang Autonomous Region, Hopeh, Wuhan and Chengchow. A wide range of machinery as well as complete processing plants were manufactured in Shanghai to cater for the special need of industrial development in various parts of China. Complete factories shipped from Shanghai included the integrated meat processing plants for Hankow and Chungking, the milk powder plant for the ethnic minority region in southwest China, the jute weaving mill for Canton, and the paper mill for Nanping in Fukien province, as well as complete sets of equipment for manufacturing suphurized rubber for the province of Yunnan, the Autonomous Regions of Sinkiang, Inner Mongolia and Kwangsi.[56]

Shanghai also contributed human resources to support the nation's industrialization programme. The metropolis possessed the largest number of universities, scientific, technical and research institutes, and the nation's largest pool of skilled industrial labour. Between 1951 and 1956, about 240,000 of the city's skilled workers were assigned

to employment in other parts of China, of whom nearly 25,000 were technicians and engineers. These personnel provided managerial and technical skill for the construction of turbine factories, boiler plants, antibiotic factories and textile mills in other cities.[57] Indeed these represented a sizable and significant contribution from one single industrial city towards the industrialization of China.

Other Economic and Strategic Considerations

An editorial which appeared in the People's Daily early in 1955 reflected the decision of the central authorities to modify the regional development plan of expanding industry to the interior and restricting growth of manufacturing activities in coastal regions. It also revealed the result of a sample survey on the utilization rate of 75 industrial installations in Shanghai: only 11 of these units were used at a rate of over 80 per cent, between 30 and 40 at 80 per cent, between 20 and 25 at 40 per cent, and 9 below 20 per cent. Similar low utilization rates also prevailed in the city of Tientsin and other industrial centres in coastal provinces such as Kiangsu and Shantung. The editorial urged full utilization of existing industrial facilities in the coastal areas, as it was argued that such optimum use would generate more capital, and provide more skilled labour and essential industrial goods necessary for supporting large scale industrial development in the interior region.[58] Also, the Chinese must have appreciated the impact of coastal industries upon national industrial growth.

An official publication pointed out the interesting relationship. Between 1952 and 1953 industrial growth in coastal areas increased by 30 per cent. In the same period national industrial growth increased by 31.7 per cent, and 69 per cent of this expansion was attributable to coastal industries. In 1955 the industrial growth rate of coastal areas was slow; it only grew 4.8 per cent over that of 1954, and the national industrial growth rate also increased only by 7.4 per cent over the same period.[59]

Finally, apart from economic reasons, the change in attitude in the appreciation of the military and strategic factors may also offer partial explanation to the need to revise the regional development policy. It has been noted earlier that the strategic dispersal of population and manufacturing industries from Shanghai and other coastal cities was found to be necessary because of the frequent air raids and naval blockade. But, by 1956 the increasing vulnerability of the remote interior to the newly developed long range missile systems was realized. Therefore, the interior would no longer be safer than the coastal areas.

Other additional factors were mainly strategic, and included the relaxation in international tension following the Korean ceasefire, the considerable strengthening of air defences along the coast and the capture of the Chusan Islands off the east coast of Chekiang province virtually halted the Nationalist's air attacks on the coastal industrial cities. In the latter part of 1955, foreign trade began to revive. For the first time since the naval blockade, Shanghai exported steel to India, Burma, North Vietnam

and other Southeast Asian countries.[60] The Sino-Japanese Trade Agreement was signed in Peking on 15 October 1956.[61] This resumption of trading relationship between China and other nations attested to the lessening of hostility along China's east coast and the relaxation of United Nation's embargo.

Revision of the Regional Development Policy and Its Impact on Shanghai's Suburban Development

A very important development occurred early in 1956. The Chinese leadership was dissatisfied with the industrial performance in the first half of the First Five Year Plan period. This was regarded as a severe setback by the central authorities who firmly believed that industrialization was the key to the modernization of China's economy. Consequently, an alternative policy, or modification of existing policies was sought to achieve faster and greater economic growth without incurring large capital investments.

In April 1956 the Political Bureau of the Central Committee of the CCP reviewed reports on the work of 34 industrial, agricultural, transport, commercial, financial and other departments of the central government. Following the discussion on these reports, Mao Tse-tung issued an important document at the meeting - On the Ten Major Relationships,[62] which identified the ten most pressing problems arising from administrative decisions or policies of the central government since the founding of the People's Republic. One of these ten crucial problems concerned the

relationship between industry in the coastal region and that in the interior. When discussing this particular problem with members of the Politburo, Mao candidly admitted the weaknesses of the regional development policy and their consequences, saying:

> In the past few years we have not laid enough stress on industry in the coastal regions. I think we should make some changes... It is wrong to adopt a negative attitude towards coastal industry. This will not only hinder the full utilization of coastal industry, it will also hinder the rapid development of industry in the interior.

He then outlined several reasons for the need to modify the policy. These included:

> The technical level of coastal industry is high, the quality of its products good, its costs low and it produced many new products. Its development has a stimulating effect on the technical level and quality of national industry as a whole.

Finally, Mao further stressed the development of coastal industry:

> If we do not utilize the industry of the coastal region we cannot establish industry in the interior. We must not simply maintain coastal industry. We must also develop it where appropriate.[63]

Although the document had never been publicly announced in any official media until the end of 1976, an elaboration of its main theme could be found in a report presented by Chou En-lai at the Eighth Congress on 16 September 1956. Referring to the dependency of development of industry of the interior upon coastal industry, Chou emphatically pointed out:

> New industrial bases would be built in the interior to maximize use of resource potential, but this policy must be carried out in a planned way.[64]

This would mean, according to Chou, that the existing industrial bases in coastal areas must be fully utilized. The supply of industrial materials, equipment, capital and technical personnel necessary for industrial construction in the inland region would be dependent upon existing seaboard industrial cities. The old industrial bases near the coast were regarded as the starting point of the industrialization of China. This contrasts with the earlier view that the key-point cities in the inland region should serve as foundation of national industrialization. The premier appealed for continuous strengthening of all existing industrial bases in northeast China, and full utilization and further development of industrial establishments in the coastal cities of east China, north China and south China. These would assist building of industries in the interior and overall development of the nation's economy.[65] Superficially, it seems that the primary objective of the revised regional development policy was to accelerate the process of national industrialization and modernization. In fact, the modification of the policy infers introduction of self-reliance as a fresh approach to national economic development. The Chinese leadership began to look for internal resources to achieve the national goal of building an industrial socialist state.

The revised policy was warmly received by the municipal authorities of Shanghai. At the First Congress of Shanghai held on 26 July 1956, the mayor stressed full utilization of the city's industrial potential and rational development of its industrial production. He enthusiastically supported the view that substantial acceleration of national

industrial output could be achieved by investing only a small amount of capital into expanding and innovating existing industrial facilities in Shanghai and other seaboard industrial centres. An example was cited in the mayor's report to illustrate the economic advantages of developing old industrial plants in the city. It stated that investment of 4 million yüan for the expansion of Sen Cheng Meter Factory would make it possible to produce 21 million yüan's worth of meters in one year's time. On the other hand, to build a new plant twice the size of Sen Cheng Meter Factory would need an investment of 50 million yüan, and it would take at least three years before actual production could be started.[66] On 8 August of the same year, K'o Ch'ing-shih, the Shanghai Party Secretary, delivered a major speech in which he laid down specific targets for the level of industrial output by the end of the Second and the Third Plan period.[67] Consequently, substantial increase of capital investment was assigned to capital construction of industry in the city in 1957, involving primarily expansion and innovation of existing industrial facilities. During the period 1950-57, the total investment in Shanghai's capital construction by both central and municipal authorities reached 2 billion yüan; 868 million yüan, or 43.4 per cent of the total amount, was invested in industry (Table 7.4). In 1956 the level of investment in capital construction was only 268 million yüan.[68] However, in 1957, planned investment in industry alone climbed to over 300 million yüan which was the highest in the entire First Five Year Plan period (Table 7.5). According to other sources

TABLE 7.4 Investment in Shanghai's Capital Construction 1950-1957 (in billion yüan)

Type	Amount	Per Cent
Industry	0.868	43.4
Agriculture, forestry and water conservancy	0.212	10.6
Others	0.920	46.0
Total	2.000	100.0

Source: Hsin-wen jih-pao, Shanghai, 1 September 1957.

TABLE 7.5 Planned Shares of Capital Investment in Various Sectors in Shanghai, 1957 (in yüan).

Sector	Amount (10,000)	Per Cent
Industry	3,222.5	32.16
Construction	500.8	5.00
Agriculture	531.5	5.30
Transportation	677.6	6.76
Public Utilities	2,373.1	23.68
Education and Health	1,903.3	19.00
Labour Reform	262.4	2.62
Others	548.6	5.48
Total	10,119.8	100.00

Source: Hsin-wen jih-pao, Shanghai, 28 August 1957.

of information, investment in industry reached as high as 44.88 per cent of the annual total investment in capital construction in Shanghai, if investment from various departments of the central government in the city's industry was included.[69]

Changes in Shanghai's Industrial Structure

The local policy to fully utilize the city's industry and to develop it rationally eventually brought about important changes in the industrial structure as well as rapid industrial expansion in the city. These changes led to a new direction of development in suburban Shanghai after mid-1956.

In 1949 over 90 per cent of Shanghai's industry was light industry, among which textile manufacturing occupied over 60 per cent. Since the implementation of the revised policy, greater emphasis was deliberately given to expanding heavy industry. In 1956, 36.55 million yüan, or 75.94 per cent of the total capital input into industry, was allocated to heavy industry, while 8.19 million yüan, or 17.02 per cent went to light industry, and only 3.39 million, a mere 7.04 per cent, to the textile industry.[70] A similar investment pattern was reported in 1957, with 72.4 per cent of the investment allocated to heavy industry and 19.8 per cent and 7.8 per cent to light industry and textile industry respectively.[71] This new investment policy generated very rapid growth in the machinery industry, iron and steel manufacturing, oil refining industry and the chemical industry,

which played a significant part in the transformation of Shanghai's industrial structure. Table 7.6 indicates a substantial increase in the proportion of heavy industry at the expense of an appreciable decline in textiles. By 1957 a diversified and better balanced industrial structure had emerged in Shanghai.

TABLE 7.6 Changes in Shanghai's Industrial Structure 1949-1957 (in per cent).

Types of Industry	1949[a]	1956[a]	1957[b]
Heavy	9.7	31.1	34
Light	29.6	30.9	33
Textile	60.7	38.0	33

Sources: a Hsin-wen jih-pao, Shanghai, 21 August 1957.
b Chieh-fang jih-pao, Shanghai, 29 September 1957.

Establishment of Industrial Districts in Suburban Shanghai

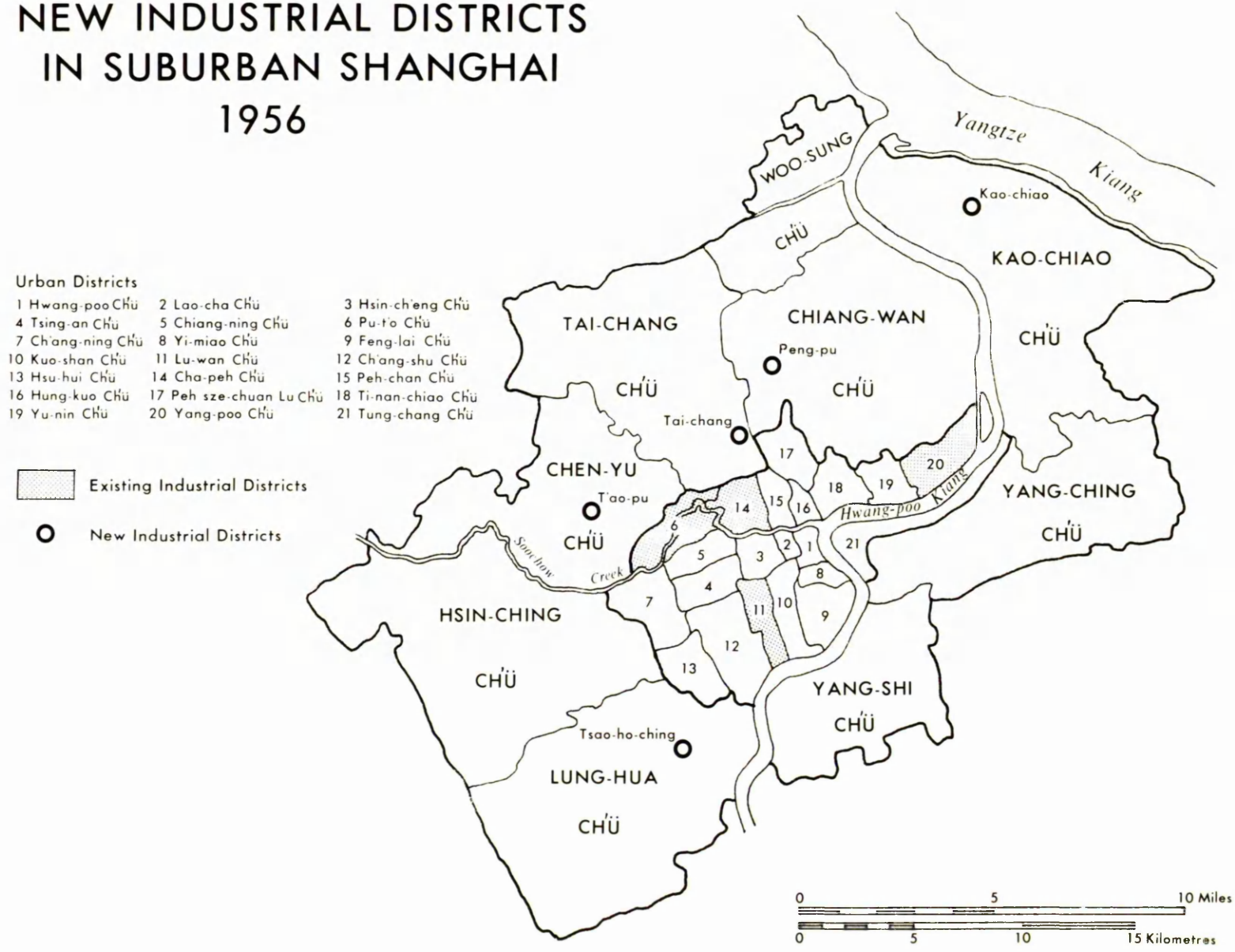
Since the revision of the policy toward the seaboard industrial cities in the spring of 1956, the upsurge of investment level in the heavy industrial sector in Shanghai greatly stimulated development in the suburban areas of this metropolis. As noted earlier in the section on urban renovation in Shanghai, since the early 1950s the city planners began to reorganize the confusing urban land use pattern: an intermixture of factories and dwellings, and to relocate chemical workshops and factories to the suburbs. By 1954 a new centre for chemical works appeared at T'aopu

in the suburban district of Chenyu. From mid-1956 to the end of 1957, the Department of Industry in Shanghai invested 130 million yüan for the relocation project,[72] which accelerated the process of urban land use reorganization. In less than two years a different spatial pattern of industrial land use emerged in metropolitan Shanghai. A total of four manufacturing centres - the industrial districts of Tsaohoching, Taichang, Kaochiao and Pengpu were created in the suburban areas (Map 7E). Each of these industrial nodes was an organized group of factories producing similar types of manufacture goods and those involved in different productive steps in a single product. The Kaochiao Industrial District specialized in oil refining and petrochemical production, the Tsaohoching Industrial District in precision scientific instruments, both the Industrial Districts of Pengpu and Taichang in iron and steel manufacturing, and the T'aopu Industrial District in chemicals and their allied products. (Table 7.7). This method of functional zoning was a rational approach in industrial land use planning, and commonly practised in cities of the PRC (Photo 7II).

Site Selection for the Suburban Industrial Districts

With the exception of the Kaochiao Industrial District, which was located to the northeast of Shanghai, at about 10 miles from the city, all the other suburban industrial nodes were established at the urban fringe. The average distance between these manufacturing districts from the central city is less than 3 miles (Map 7E).

NEW INDUSTRIAL DISTRICTS IN SUBURBAN SHANGHAI 1956



7II. Shanghai's New Industrial District - A Night Scene.

TABLE 7.7 New Industrial Districts in Suburban Shanghai 1954-1958.

Industrial Districts	Location	Total Area(km^2)	Major Types of Industry
T'aopu[a]	Chenyu	2	Essentially a chemical industrial district Dyeing factories, dyeing materials factories, saccharin plant, rubber re-cycling plant, organic chemical factories, synthetic fibre factory, fountain pen factories, and other industrial plants producing organic glass, sulphuric acid and pharmaceutical products.
Pengpu[b]	Chiangwan	3.4[e]	Electrical machinery factories, iron works and iron foundaries
Tsaohoching[c]	Lunghua	2.45[e]	Precision scientific instrument plants
Taichang[d]	Taichang	n.d.	Iron works and iron foundaries, iron and steel mill
Kaochiao	Kaochiao	n.d.	Primarily a chemical district Oil refinery and petrochemical works

Sources:

a WHP, Shanghai, 30 October 1954.

b and c HWJP, Shanghai, 15 June 1957.

d CFJP, Shanghai, 24 July 1956.

e CFJP, Shanghai, 6 April 1957.

f WHP, Shanghai, 6 July 1958.

Apparently, the siting of these five suburban industrial centres was based upon the following key principles of

industrial land use planning; minimization of industrial pollution, co-ordination among manufacturing activities and rational selection of physical sites in terms of availability of water, transportation facilities and power.

It is worth noting that while many industrialized countries have long been plagued with pollution problems induced by industrial activities, protection of urban residents from industrial pollution hazards has been a national concern in the PRC. At the beginning of the First Five Year Plan period the central government issued directives urging planners to pay attention to avoiding industrial contamination of the urban environment in the locational planning of industrial establishments in both urban or suburban areas.[73]

In 1954 the municipal government of Shanghai established the first manufacturing centre away from the urban area to relocate the city's chemical industry, as this type of industry was the major source of air pollution in the city. The site of this chemical production centre, known as the T'aopu Industrial district, was located to the northwest of Shanghai, as it was considered ideal for the chemical industry. The prevailing winds over the Yangtze Delta come from the southeast, and thus urban Shanghai is at the up-wind direction in relation to the T'aopu Industrial District. Further, the areas surrounding the industrial site have a low population density.[74] A similar environmental factor was taken into consideration in the establishment of the Tsaohoching Industrial District as a scientific instrument manufacturing centre. The relatively clean and less dusty environment there was regarded to be suitable for the production of sophisticated and precision scientific instru-

ments.[75] The planners' decision on selecting locations for new industrial and urban developments in Peking, the national capital, also rested on environmental considerations. Relatively pollution free industries such as the manufacturing of foodstuffs, clothing, art crafts and scientific instruments were permitted to remain in the old city.[76] All the industrial districts built during the First Plan period were located in the suburban districts lying to the east and the south of the city. Hence polluted air of the industrial districts would not be carried into the populous urban area of the capital by the strong northwest prevailing winds. On the other hand, all non-industrial establishments, such as educational institutions, government offices and workers' housing projects were located in the suburban areas lying to the west and the north of the city. Another example may be cited. In Tsinan, the provincial capital of Shantung, all the industrial zones developed since liberation were located down-wind direction from the city. This was a planning measure to reduce the amount of industrial pollutants reaching the densely inhabited urban area. Likewise, a large thermal power plant was built several kilometres from Tsinan, on the northern bank of the Hsiaoch'ing River. At this site the prevailing winds carry the smoke away from the city.[77]

To the Chinese city planners, the grouping together of related types of industries serves to achieve efficiency in industrial production. Close proximity of manufacturing activities involved in different production stages of an industrial product reduces transportation costs on the

shipping of semi-processed manufactured goods, and thus lessens total capital investment. For example, in 1956 several large iron works and iron foundaries in urban Shanghai were moved to the Taichang Industrial District in the suburban area lying to the north of the city. These plants included Chunghua Iron Works, Taitung Iron Works, Tehhua Iron Works, Shunho Foundary, and a number of similar types of industry. Before the relocation of these factories, Shunho Foundary was a major supplier of casting moulds for Chunghua Iron Works. Because these two factories were seven miles apart in their original location in the city, shipping of casting moulds had induced high transportation cost. Further, because these two factories were situated within the densely populated area of Shanghai, large-size casting moulds had to be shipped at night.[78]

Other factors of industrial location had also been taken into consideration in the site selection of Shanghai's suburban industrial districts. As already noted nearly all these manufacturing centres established during the period 1954-1957 were within five kilometres from the old industrial areas in the city, thereby gaining easy access to existing facilities. This spatial arrangement was conducive to relatively lower cost and efficient industrial operations. Selection of the site for the Taichang Industrial District was also attributable to good availability of water, power and transportation facilities.[79] The Kaochiao Industrial District, a centre of oil refining and petrochemical manufacturing, was built at a site about 13 kilometres from urban Shanghai. Apart from environmental considerations,

its proximity to the mouth of Hwangpoo Kiang facilitates the use of low cost water transportation for shipping crude oil and processed petroleum products (Photo 7 III).

Summary

Throughout the First Five Year Plan period the pace and the spatial pattern of urban growth and suburban development in the PRC are intimately related to national economic development policies, as is typical of all centrally planned states. During the early 1950s mainly because of state policy to suppress investment in existing seaboard industrial cities, urban development in Shanghai was limited to the construction of workers' housing projects in its peripheral areas, at a convenient distance from existing industrial districts, and to the reorganization of the disorderly urban land use patterns created by foreign powers during the treaty port era. Owing to the absence of large scale industrial construction and major municipal development, the spatial growth of this world city was slow relative to Peking and other key-point cities (see Table 5.1). Ironically, yet nevertheless fortunately, Shanghai did not experience the disruption of excessive land expropriation and land squandering brought about by state enterprises and municipal planning authorities, which prevailed in new industrial cities during the entire First Five Year Plan period (see Chapters 4 and 5). Partly because of the availability of better urban planning resources in the city, suburban development was more orderly. The spatial form resulting from post-liberation growth was compact; in contrast with

7III. Kaochiao Chemical Industrial District.

the sprawling morphology of Peking[80] and other new industrial centres.

Since mid-1956 the upsurge of state capital input in coastal manufacturing centres greatly stimulated the expansion of industries in Shanghai. It also acted as a catalyst accelerating transformation of the industrial land use in the city. The choice of a suburban location for Shanghai's rapidly expanding heavy industry, such as chemical works, oil refining, and iron and steel manufacturing, was primarily based on environmental factors. Also the availability of suburban land at the disposal of Shanghai's urban planners facilitated the rational dispersal of manufacturing activities from the central city. By the end of 1957, industrial land use in Shanghai's suburban areas had been organized into a multinodal pattern. This represents the accomplishment of the preliminary stage of socialist urban transformation of this largest foreign-created city in modern China. The following chapter will analyse the polycentric development of urban settlements within the Shanghai city region, one of the strategies adopted by the central government to achieve industrialization without massive urbanization during the Great Leap Forward.

CHAPTER 7 - NOTES

1. The central theme of Murphey's book on Shanghai focusses on the pre-1949 development of the city. See Murphey, R., Shanghai: Key to Modern China, (Cambridge: Harvard University Press, 1953). The only geographical work on post-1949 Shanghai is Shang Hsi-ti's Shang-hai ti-li chien-hua (Introduction to the Geography of Shanghai), (Shanghai: Jen-min ch'u-pan-she, 1974).

2. Shang Hsi-ti, et al., ibid., pp.2-3.

3. "The Geology of the Shanghai Area", The China Journal, vol.16, 1932, p.293.

4. Shang, op.cit., p.6.

5. This maze of water channels can be clearly seen in Band No.6 and Band No.7 (infrared bands) of the Landsat imagery. All water surfaces, being infrared absorptive, appear in a very dark tone which strongly contrasts with the lighter tone of land surfaces (see imagery in Chapter 6).

6. Murphey, R., op.cit., p.49.

7. Shang, op.cit., p.22 and p.23.

8. Shang-hai nien-chien 1946 (Shanghai Yearbook 1946), (Shanghai: Shang-hai t'ung-hsun-she, 1946), Section B, p.5. Also: "The Shanghai Climate", The China Journal, vol.16, 1932, p.295.

9. The city walls of Shanghai were oval in shape, a major departure from the square or rectangular outline of traditional Chinese city ramparts. They were built in 1555 A.D. to protect Shanghai from frequent raids of Japanese pirates who plagued the East China coast during the mid-sixteenth century.

10. Hsin-wen jih-pao (News Daily), Shanghai, 8 August 1957; hereafter cited as HWJP.

11. Wen-hui pao (The Cultural Contact Daily), Shanghai, 11 February 1957; hereafter: WHP.

12. Information given to the author by two urban planners from the Bureau of Urban Planning and Administration in Shanghai at an interview on 21 June 1977.

13. HWJP, 21 July 1949.

14. Chieh-fang jih-pao (Liberation Daily), Shanghai, 11 August 1949; hereafter: CFJP.

15. HWJP, 9 April 1950.

16. HWJP, 20 March 1950.

17. HWJP, 4 August 1955.

18. HWJP, 14 February 1950.

19. Shang-hai chieh-fang i-nien, op.cit., p.3.

20. Hua-tung-ch'ü t'sai-cheng ching-chi fa'ling hui-pien, (Compendium of Economic and Financial Regulations for the East China Region), op.cit., p.1394.

21. Ho-nan jih-pao (Honan Daily), Chengchow, 25 February 1950.

22. People's China, vol.1, no.5, 1 March 1950, p.41.

23. Shang-hai chieh-fang i-nien, op.cit., p.23.

24. Jen-min jih-pao (People's Daily), Peking, 17 October 1949; hereafter: JMJP.

25. Hsu Shih-p'ing, (deputy minister of Construction Engineering), "Urban Construction in China during the Last Decade", Ch'eng-shih chien-she, (Urban Construction), no.10, 14 October 1959, pp.4-10.

26. Interview given to the writer with two Shanghai city planners on 21 June 1977.

27. Potter, op.cit., p.256.

28. HWJP, 20 September 1951.

29. Interview, 21 June 1977.

30. JMJP, 11 August 1954. Quoted in Tien, H. Yuan, China's Population Struggle: Demographic Decisions of the People's Republic, 1949-1969, op.cit., p.63.

31. Shen-hsi jih-pao (Shensi Daily), Sian, 25 March 1955.

32. New China News Agency, Sian, 5 January 1953.

33. HWJP, 21 April 1953.

34. Chien-chu-chung ti Peh-ching, op.cit., p.5.

35. CSCS, no.10, op.cit., p.19.

36. Nan-fang jih-pao (Southern Daily), Canton, 27 May 1953; hereafter cited as NFJP.

37. In 1949 the areal extent of suburban Shanghai was identical with that of the Municipality of Greater Shanghai, minus the city's built-up area, established by the Nationalist government on 7 July 1927.

38. HWJP, 8 December 1951.

39. NFJP, 19 October 1950.

40. WHP, 29 October 1950.

41. CFJP, 6,7,12 May 1952.

42. NFJP, 6 October 1952.

43. NFJP, 14 September 1952.

44. NFJP, 27 April 1953.

45. HWJP, 29 October 1952.

46. Interview, 21 June 1977.

47. Chi-hua ching-chi, op.cit., p.13.

48. Wei-ta ti shih-nien, op.cit., p.129.

49. Wu , op.cit., p.115.

50. Chao, Y.S., Railways in Communist China, (Hong Kong: Union Research Institute, 1955), p.14.

51. Ibid., p.24.

52. Wu, op.cit., p.269.

53. Wei-ta ti shih-nien, op.cit., p.92.

54. People's China, no.3, March 1954, p.20.

55. HWJP, 8 August 1956.

56. HWJP, 22 December 1955.

57. CFJP, 14 September 1957.

58. JMJP, (editorial), "We Must Carefully Plan the Development of Local Industry", 2 March 1955.

59. Hsin-hua pan-yüeh-kan (New China Semi-monthly), no.1, 1957, op.cit., p.70.

60. HWJP, 30 September 1956.

61. HWJP, 17 October 1956.

62. This document was circulated only among members of the Politburo at that particular meeting. The ten relationships are listed as follows:-

    (1) The relationship between industry and agriculture, and between heavy industry and light industry.
    (2) The relationship between industry in the coastal regions and industry in the interior (See Appendix D for the full text).

(3) The relationship between economic construction and defence construction.
(4) The relationship between the state, the units of production and the individual producers.
(5) The relationship between the central authorities and the regions.
(6) The relationship between the Han nationality and the national minorities.
(7) The relationship between Party and non-Party.
(8) The relationship between revolutionary and counter-revolutionary.
(9) The relationship between right and wrong.
(10) The relationship between China and other countries.

Note: The full text of Mao's speech "On the Ten Major Relationship" was published for the first time on 25 December 1976, about three months after Mao's death, by the New China News Agency to commemorate the former chairman's 83rd birthday anniversary. Also it was published in volume 5 of Mao's Selected Works in the spring of 1977, and as a separate pamphlet in English late in the same year. Both versions have been edited by Hua Kuo-feng, the present chairman of the Chinese Communist Party.

63. Schram, S., (ed.), op.cit., pp.65-67. Italics added.

64. Chou En-lai, "Report on the Proposal of the Second Five Year Plan concerning the Development of National Economy", Chung-hua jen-min kung-ho-kuo fa-kuei hui-pien (Compendium of Laws and Ordinances of the People's Republic of China), 1956, op.cit., p.126.

65. Ibid., p.127.

66. Chen Yi, (Mayor of Shanghai), Report to the First Congress of Shanghai Municipality, "Mobilize All Strength, Energetically Develop Shanghai's Industry, and Struggle for the Acceleration of Our Nation's Socialist Construction", CFJP, 27 July 1956.

67. HWJP, 9 August 1956.

68. "Report on the Budget Balance of 1955 and the Budget of 1956", HWJP, 9 August 1956.

69. HWJP, 28 August 1957.

70. HWJP, 9 August 1956.

71. WHP, 1 October 1957.

72. WHP, 6 July 1958.

73. Chi Yui-hua, "Construction Our Cities More Beautifully", Jen-min shou-t'se (People's Handbook), 1955, p.245.

74. WHP, 18 April 1954.

75. CFJP, 24 July 1956.

76. Lo, C.P., "Spatial Forms and Land Use Patterns of Modern Chinese Cities: An Exploratory Model", paper presented at the Fifth Leverhulme Conference, Section 5, Hong Kong, 17 December 1977, p.3.

77. Buck, D., "Directions in Chinese Urban Planning", Urbanism, Past and Present, no.1, 1975-76, p.28.

78. CFJP, 24 July 1956.

79. Ibid.

80. Map Showing Urban Expansion of Peking (1949-1957), Chien-chu-chung ti Peh-ch'ing (Peking Under Construction), op.cit., p.5.

CHAPTER 8

SATELLITE TOWN[1] DEVELOPMENT IN THE CITY REGION OF SHANGHAI

Introduction

This chapter examines and assesses the development of urban decentralization in metropolitan Shanghai since the launching of the Great Leap Forward. The year 1958 heralded the beginning of a new phase in the planning and development of this world city. Earlier, the systematic building of suburban industrial districts in the city's outskirts was part of the municipal planning effort to reorganize the industrial land use within the built-up areas. The imminent spatial growth and influx of peasants resulting from a substantial increase of state investment for industrial expansion in 1958 made it necessary to disperse both residents and economic activities from the central city.

It should be noted that a very significant turning point in the history of city building of the People's Republic of China occurred during 1958-1959. In many large urban centres where active industrial expansion was taking place or anticipated, city planners began to plan and build satellite industrial communities in the suburban areas.[2] The institution of integrated administrative and planning units in large and medium-sized cities in January 1958, involving annexation of a large suburban territory and centralization of local planning decisions to municipal authorities, provided the spatial framework and administra-

tive basis for planned urban expansion and suburban development.

Rationale for Satellite Town Building

The construction of planned satellite communities within city regions was a ramification of the central policy to build small and medium-sized cities. This planning decision was adopted in 1956 to contain rapid urban growth, particularly the sprawling expansion of key-point cities - itself a direct consequence of China's emulating the Soviet industrial planning model emphasizing nodal concentration of large numbers of manufacturing enterprises. This central objective of building satellite towns in China was similar to that of Britain's first generation of new towns, which primarily served the purpose of relieving congestion in the large conurbations of London, Birmingham, Liverpool and Glasgow. In the British case, the green belt was part of the plan for restricting the spatial growth of these metropolises.

The official record showing the number of metropolitan cities and large cities in 1952 and 1957 attested to the growing trend of urban gigantism. During the First Five Year Plan period the number of cities with a population of over 1 million increased from 9 to 14, and those with a population ranging from 100,000 to 1 million grew from 96 to 110 (Table 8.1). By 1957 the total number of "million cities" in China had surpassed that in India, and in the highly urbanized nations of the Soviet Union and the United States.[3]

TABLE 8.1 Number of Cities by Size Categories 1952-1957.

Size Category	Population	1952	1957
Metropolitan Cities	Over 5,000,000	1	1
	3,000,000-5,000,000	0	2
	1,000,000-3,000,000	8	11
Large Cities	500,000-1,000,000	15	20
Medium-sized Cities	100,000-500,000	81	90
Small Cities	Under 100,000	54	52

Source: Wei-ta ti shih-nien, (The Ten Great Years), op.cit., p.9.

The inexorable spatial growth of industrial centres associated with active industrialization engendered a number of thorny problems. From experience acquired by urban planners during the First Five Year Plan period, preliminary plans for large cities required several years to prepare. The delay in completing urban land use plans caused widespread and chaotic development in cities (see Chapter 5) and serious hinderance to industrial construction.

In the process of building large socialist cities after 1952, China had to allocate large amounts of financial resources solely for installing up-to-date utilities such as modern water works and waste disposal systems in the large cities. Before 1949, only a few large urban centres under partial or complete foreign control such as Shanghai, Tientsin, Chingtao, Talien and Shenyang had water works and sewage systems. These urban services were mainly constructed, owned and managed by the British or the Japanese.[4] With the

exception of Shenyang, virtually all the urban centres designated as key-point cities had no public facilities. Within a decade of liberation, 126 waterworks had been built and some 6,000 kilometres of waterpipes and 4,000 kilometres of sewers had been laid. Substantial developments had also been made in providing electric lights, gas supplies, telephone services, urban transit systems and paved streets.[5] The state invested 8.94 billion yüan to provide modern water supplies and sewage systems in new industrial cities, which accounted for as much as 68 per cent of the national capital investment in urban public utilities.[6] The development of large industrial centres with populations of over one million, in particular, required vast capital investments on very costly engineering and technical installations, such as city-wide transportation facilities and other urban services. The central government needed to spend 558 to 695 yüan for each urban resident toward construction of urban utilities and amenities in the "million cities".[7] Between 1952 and 1958 a total of 2.19 billion yüan was invested for this purpose. In some years during this period, the amount of capital spent on installation of urban utilities exceeded that invested on government administration, health and welfare, agriculture, forestry and meteorology, and geological survey.[8] Even Shanghai, a city possessing relatively good public utilities when compared with all other urban centres in China, proposed to spend 237.3 million yüan, or 24 per cent of the 1957 municipal budget on the improvement and extension of existing facilities.[9]

When the central government revised its regional development policy favouring the active economic growth of seaboard cities in the spring of 1956, municipal planning authorities in Peking, Shanghai and Tientsin anticipated immediate rapid spatial growth and an increase in immigration. The building of "secondary centres" to disperse both population and employment from the central city was proposed as one of the strategies to resolve the dilemma of vigorous industrial expansion and excessive urban growth. Indeed, after mid-1957 the subject of satellite town building inspired great enthusiasm among urban planners. Many articles and editorials appeared in official and quasi-official publications rejecting the earlier ideas of developing large socialist cities and encouraging the building of small ones so as to economize in capital investment and consumption of agricultural land for urban construction to provide better rural-urban balance, an improvement in living standards and the environment of urban residents, and national defence. A leading planner explained his view on containing excessive urban growth and elaborated the advantages of building small settlements:

> If the size of cities is too large, it will not only occupy too much farmland and reduce the size of farm labour, but also create shortages of subsidiary food supply for urban residents. Of course, we will retain all existing metropolises and large cities, and fully develop their potential for aiding socialist construction. This does not suggest, however, that we want to build more metropolises. The size of socialist cities should not be developed too large... Therefore, over concentration of factories, schools and scientific research institutes in cities must be avoided... In accordance with the principle of 'large scale dispersal and small scale concentration' [ta-fen-san, shao-chi-chung], we must plan and build small cities and satellite

> communities outside large and medium sized cities, forming a constellation of socialist cities. There are several advantages. First, relocation of factories, schools and offices in these satellite settlements prevents over concentration in central cities. Secondly, using farmland surrounding these small towns to replace open space set aside for recreational purposes in cities will economize use of land. Further, for satellite towns plenty subsidiary foods and fruits may be obtained locally, thus avoiding long distance shipment of these daily necessities...[10]

According to some urban planners, satellite towns having a population ranging from 50,000 to 200,000 were most economical to built and maintain, chiefly because towns of this size required less capital investment for housing, urban infrastructure, amenities and public utilities. The low volume of traffic would dispense with high quality roads.[11] Because of the short distance between residences and factories, workers could go to work either on foot or by bicycle. The dispersed satellite communities facilitated dissemination of technical skill to the countryside, hence raising the cultural and living standards of rural inhabitants, and contributing to the improvement of urban-rural relationships.[12] Mao Tse-tung himself stressed that the building of small cities was not an anti-urban policy, and explained the strategic significance of creating a more diffused pattern of small urban centres:

> In future we want to eliminate the disparity between cities and rural villages, but we need to write down emphatically that this is <u>not to reduce the importance of cities</u>. In future cities should not grow too large. (We) must disperse city dwellers to rural villages and build many small cities. This is very advantageous in the event of nuclear wars.[13]

Accelerating Industrial Expansion in the City Region of Shanghai

Towards the end of 1956 the State Statistical Bureau revealed the industrial growth rates in coastal areas and inland regions. In the provinces of Liaoning, Shantung, Hopeh, Chekiang, Kiangsu, Fukien and Kwangtung, and the three major coastal cities of Peking, Tientsin and Shanghai, the total value of industrial production in the third quarter of the year exceeded that of the first quarter by 15 per cent, whereas it also increased by 35 per cent over the amount of the same period in 1955. Between the first and the third quarters of 1956, the coastal areas surpassed the interior in industrial growth rate. The former recorded an increase of 9 per cent whereas the latter only 6.7 per cent.[14] The more rapid industrial growth in coastal areas in the second half of 1956 strongly suggested that the impact of the revised regional development policy implemented in the spring of the same year was beginning to take effect. The success of this central policy strengthened the confidence of the Chinese leadership in raising the investment level for expanding the coastal industrial bases after the beginning of the Great Leap Forward.

The year 1958 witnessed an enormous upsurge of capital input in Shanghai's industrial sector. The total investment that year amounted to 973.6 million yüan, which was equivalent to 262 per cent of the total investment in 1957, or 71 per cent of the total investment in the entire First Five Year Plan period.[15] This high level of capital

investment was a decisive factor in the increase in the number of large industrial enterprises in the city. Industrial development during the First Five Year Plan period mainly involved the expansion of existing industrial plants and the amalgamation of small workshops forming large factories. Since 1958 construction of new factories, particularly those in the heavy industrial sector, was given a priority in the industrial expansion programme of the city. Wu's study on distribution of industrial plants in 17 Chinese cities from 1949 to 1960 revealed that a total of 43 new plants were built in Shanghai, second only to Peking where 66 new plants were added.[16] Available sources indicate that in 1958 and early in 1959, a large number of above-norm industrial plants was built in Shanghai (Table 8.2).

Pursuing the policy to decentralize industrial functions in the city, the Municipal People's Committee of Shanghai and the Department of Industry erected these industrial plants in both the recently established and existing suburban manufacturing nodes. This contributed to the rapid expansion and numerical increase of decentralized industrial districts within the city region, which drastically changed the industrial map of Shanghai. Since the first chemical industrial district was established at T'aopu in 1954, the total number of suburban manufacturing centres increased to five by the end of 1957. In 1959 at least twelve industrial districts existed in the city region of Shanghai. The new ones included Minhsing, Woosung, Putung, Wooching, Hsinching, Changchiao, Chouchiatao, Anting, Sungkiang and Wuchiaochang.[17] With the exception of the Woosung Industrial District, all of

TABLE 8.2 Large Modern Industrial Projects Installed in Suburban Shanghai 1958-1959.

	Types of Industry	Location
1	Integrated steel mill[a]	northern suburb
2	The Shanghai Coking Coal Gas Plant[b]	" "
3	The Shanghai Nitrogenous Fertilizer Plant[b]	" "
4	The Shanghai Artificial Fibre Factory[b]	" "
5	The Shanghai Thermal Power Station[b]	" "
6	Synthetic fibre plants (7 in number)[c]	" "
7	The Shanghai No.1 Steel Tubing Plant[d]	" "
8	The Hsinan Electrical Machinery Factory[e]	" "
9	The Shanghai Ball Bearing Plant[f]	Pootung
10	The Shanghai Rubber Manufacturing Plant[g]	T'aopu
11	The Shanghai Electrical Machinery Plant[g]	Minhsing
12	The Shanghai Heavy Machinery Plant[g]	"
13	The Hsinmin Machinery Plant[g]	"
14	The Shanghai Heavy Lathe Plant[h]	"
15	Steel milling factories (number unspecified)[i]	"
16	The Shanghai Boiler Factory[j]	"
17	The Shanghai Metallurgical Plant[j]	"
18	The General Machinery Plant[j]	"
19	The Shanghai Alloy Plant[k]	Yunchaopien
20	The Shanghai No.2 Steel Piping Plant[k]	"
21	The Shanghai No.1 Iron and Steel Plant[g]	Woosung
22	" " No.2 " " " " [l]	"
23	" " No.3 " " " " [l]	"
24	" " No.5 " " " " [l]	Pootung
25	" " No.6 " " " " [l]	Woosung
26	The Shanghai Paper Making Machinery Plant[m]	Pengpu

TABLE 8.2 (Continued)

	Types of Industry	Location
27	The China Oxygen Plant[n]	Pengpu
28	The Taishan Chemical Works[n]	"
29	The Shanghai Electrical Machinery Plant and 28 others[n]	"
30	Radio and wireless plants, and scientific instrument factories (16 in number)[n]	Tsaohoching

Sources:

a WHP, Shanghai, 22 April 1958.

b HWJP, Shanghai, 4 March 1958.

c CFJP, " 22 April 1958.

d " " 13 May 1958.

e " " 11 June 1958.

f " " 6 June 1958.

g " " 8 September 1959.

h " " 19 August 1958.

i " " 6 November 1958.

j " " 18 January 1959.

k " " 29 May 1959.

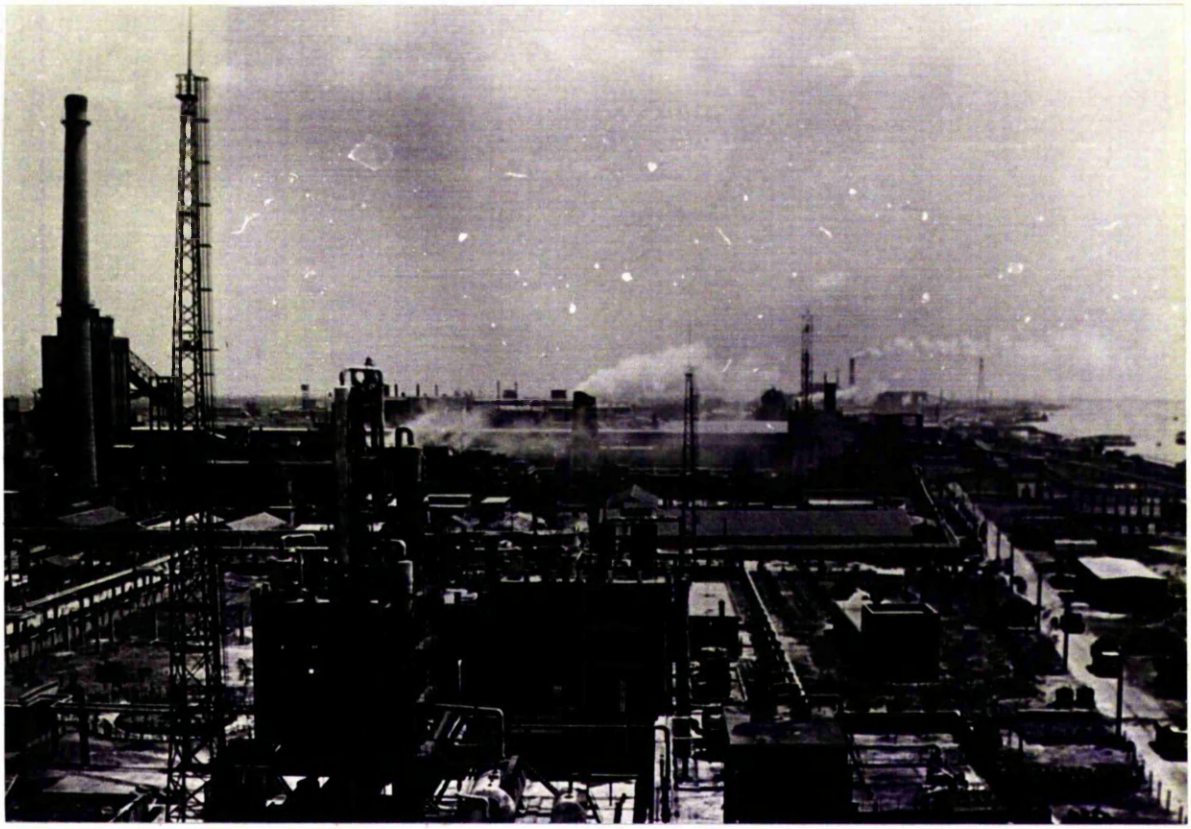
l Hsia, R., Steel in China: Its Output Behaviour Productivity and Growth Pattern, (Wiesbaden: Otto Haurassowitz, 1971), pp. 205-6.

m CFJP, Shanghai, 26 June 1958.

n WHP, " 6 July, 1958.

these were located on average at a distance of about 30 kilometres from Shanghai. Table 8.3 shows that each of these industrial districts contained related types of industry, for example, centreing on chemicals, iron and steel, oil refining and petrochemical products, scientific instruments and textiles (Photo 8I).

The accelerated development of new manufacturing centres in suburban Shanghai is reflected by the unprecedented amount of suburban land designated for industrial use by the Municipal People's Committee. In his speech at the Second Meeting of the Third People's Congress in Shanghai held in mid-1959, the mayor disclosed that over 36,800 mou of suburban land, equivalent to about 9.5 square miles had been approved for use for industrial construction. This surpassed the total amount of land used for industrial purposes during the entire First Five Year Plan period by over 50 per cent. It was also revealed that over 85 per cent of the land was used for industrial construction, transportation and warehouses in the industrial districts of Minhsing, Woosung, Pengpu, Tsaohoching, Chouchiatao, and T'aopu.[18] As these industrial nodes were scattered in the suburban area of the city region, despite the large-scale transformation of land from non-industrial to industrial and other urban uses, rapid expansion of the central city and encroachment upon market garden land of the suburban communes around the city fringes were avoided. During 1958 most of the 4.68 million square metre workers' residences built in the city were erected at the suburban industrial districts. These housing estates possessed



8I. Wuching Chemical Industrial District.

their own kindergartens, crèches, restaurants, shops, public libraries and recreational facilities.[19] It may be claimed, therefore, that the year 1958 marked the beginning of the co-ordination of the dispersal of urban population and the decentralization of industrial functions.

TABLE 8.3 Industrial Districts in Suburban Shanghai, 1958-1959.

	Name	Major Types of Industry
1	Minhsing[a]	Heavy machinery, iron and steel
2	Woosung[b]	Steel manufacturing
3	Pootung[c]	Textile, iron and steel
4	Wuching[c]	Chemical, iron and steel
5	Yangpu[b]	Machinery, electrical equipment
6	Hsinching[c]	Scientific instruments
7	Changchiao[c]	" "
8	Chouchiatao[d]	Iron and steel

Sources:

a WHP, Shanghai, 6 July 1958.

b Sun Ching-chih, et al., Hua-tung ti-ch'ü ching-chi ti-li (Economic Geography of East China Region), (Peking: K'o-hsüeh ch'u-pan-she, 1959), p.88.

c HWJP, Shanghai, 4 March 1958.

d CFJP, Shanghai, 6 June 1959.

Minhsing - China's First Satellite Town.[20]

A salient feature in the city regions of China is the building of satellite settlements in the suburban areas. The adoption of a central policy to build small and medium-sized cities and to disperse population and industrial activities away from large cities, for economic and national security reasons, added impetus to such development.

To implement the central policy of industrial decentralization and population dispersal in Shanghai, the Second Meeting of the First Congress of the Shanghai Municipality was held between December 1957 and January 1958. A resolution concerning the construction of satellite towns in Shanghai's suburban areas was passed. Significantly, it was stressed at the meeting that these satellite settlements would not be allowed to be developed into dormitory towns or health resorts,[21] implying the creation of balanced and self-contained communities specifically designed for decentralizing the city's population and industries.

When the City Region of Shanghai was established in January 1958, one of the major objectives was to provide a wider range of sites for industrial district and satellite town development. Annexation of a large territory into Shanghai's City Region in December of the same year enabled the urban planners to locate future satellite towns at an optimal distance from the central city. As conceived by Shanghai's city planners, the optimal distance between the central city and its satellites lies within a range of 20 to 70 kilometres.[22] This would certainly prevent the

satellites from being absorbed subsequently, thereby aggravating the problem of rapid expansion of built-up areas of any large city, while retaining certain mutual advantages in industrial production and other functional relationships.

Undoubtedly economic attributes were given the highest priority in satellite town development in China. The planners proposed the use of existing town sites and industrial districts in the city regions, located at or near water and railway transportation lines. Preference in site selection was to be given to suburban towns possessing urban infrastructures: power supplies, a sewage system, good roads and residential housing. Thus, the need for capital investment in the construction of these urban facilities would be minimized. To conform with the state policy of building small and medium-sized cities and to avoid the excessive concentration of industrial activities in one locality, the Shanghai planners adopted the state guideline of restricting urban population within the range of 50,000 to 200,000 for the new satellite communities in the City Region of Shanghai.[23]

Within each of these communities, separate independent neighbourhoods were to be created, designed primarily to shorten the distance between residence and place to work. Each neighbourhood unit clustered around a factory or major commercial centre. Factories were sometimes surrounded by parks which in turn were ringed by workers' housing projects. Scattered within the neighbourhood were schools, markets, clinics and shops.[24] This urban design was not dissimilar to that in the British new towns. Although most of the latter possessed similar types of basic public amenities

and social services, some were provided with more ambitious developments for sports and recreation. For example, there was a fully equipped sports complex in both Harlow and Welwyn Garden City, comprising athletic tracks and an arena of international standard and other first class sports facilities. Also the Town Centre in many British new towns was artistically designed with reflecting pools, fountains, sculptures and mosaics.[25]

To facilitate efficient industrial production, each of the satellite towns in the Shanghai City Region accommodated related types of industry. In this respect, they shared the same characteristics of the industrial districts established earlier. On the other hand, most British new towns possessed a fair variety of industry. It was an exception rather than a rule that one industry predominated at one locality, as in the case of steel manufacturing at Corby, coal mining at Peterlee, aeronautical industries at Hatfield, and the manufacturing of forgings at Livingston.[26]

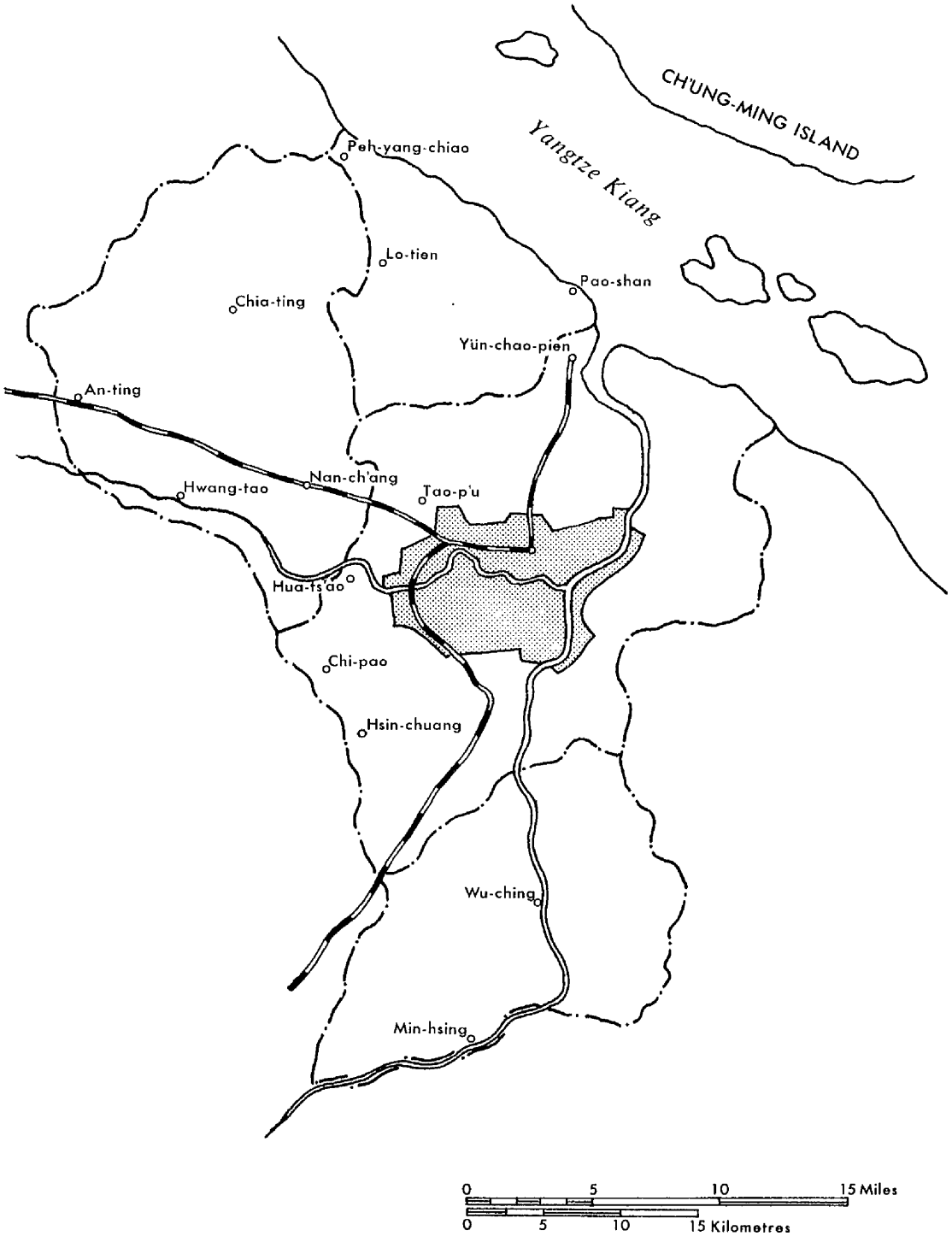
The drafting of the general development plan for Shanghai's suburban areas and the survey of potential sites for satellite town development were both initiated in February 1958 and completed at the end of the same year. The plan encompassed the location of satellite towns and their industry, distribution and organization of agricultural communes responsible for supplying subsidiary foods to the urban population of the parent city and the satellite towns, and detailed planning of transportation networks within the entire municipality. This regional plan included the preliminary design of the first satellite town in the City

Region of Shanghai, the Industrial District of Minhsing, and investigation of other potential sites for future satellite town developments at Wuching, Pehyangchiao, Nanchang, Hwang-tao, Anting and others (Map 8A). Furthermore, it comprised planning for integrated utilization of major waterways for transportation purposes and farm irrigation, and for storage, shipping and marketing of fifteen selected types of industrial goods in the city.[27]

As an integral part of the satellite town development programme, an extensive road construction project designed to improve linkage and to facilitate functional co-ordination between Shanghai and its industrial satellites was initiated early in 1958. By late 1959 a trunk road system was completed, connecting Shanghai and Minhsing, Woosung, Pengpu, and Wuching.[28] This improved road system was supplemented by the branch lines of the major railways in the region: the Shanghai-Hangchow Railway, the Shanghai-Woosung Railway, and the Shanghai-Nanking Railway.[29] Further, a special railway for freight hauling, known as the Hsinmin Railway, was opened to traffic in the spring of 1959. This 13.7 kilometre railway afforded a direct link between Hsinchiao in Shanghai and Minhsing, and played an important role in the industrial development of the satellite town.[30] To provide easy access to Minhsing and the industrial districts of Woosung and Yunchopien from various parts of the central city, construction of Chung Shan Road, originally proposed by the planning authority of the Greater Shanghai Municipality before 1949, began at the end of 1959. This perimeter road almost encircled the built-up area of

MAP 8A

PROPOSED SATELLITE TOWNS IN THE CITY REGION OF SHANGHAI 1958



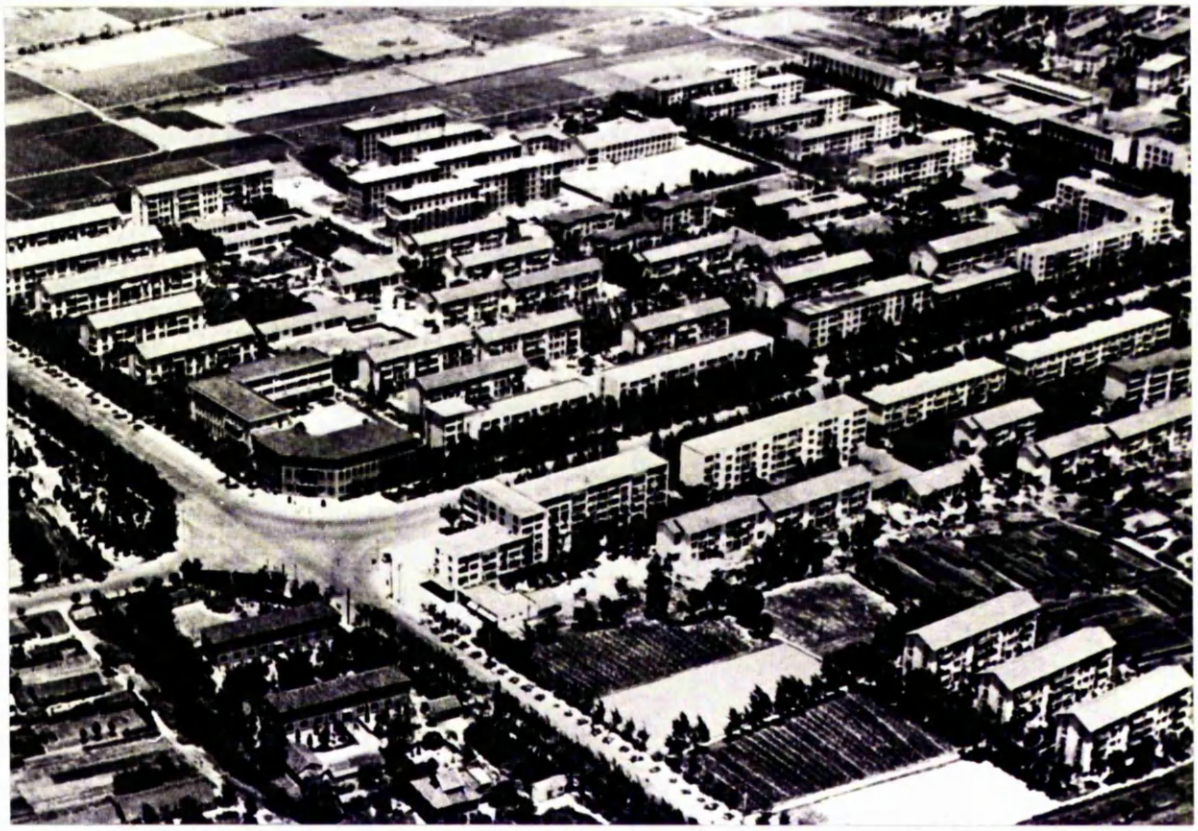
the city, passing through the urban districts of Hungkao, Chapeh, Putao and Chiangning, and the suburban counties of Shanghai and Paoshan.[31] Development of these land communication systems contributed to accelerating suburban agricultural production as well as achieving industrial decentralization within the integrated administrative and planning unit.

The Industrial District of Minhsing, established in 1958, was selected by the Shanghai Municipal Bureau of Urban Planning and Administration as the site for Shanghai's first satellite town. It was the administrative, cultural and economic centre of Shanghai Hsien. The criteria for its selection were primarily the favourable geographical attributes of that particular site. The town of Minhsing is spatially separated from the parent city. It is located at about 30 kilometres south of Shanghai City, on the left bank of Hwangpoo Kiang.[32] This river forms an essential component of the Shanghai Harbour. Its navigation channel averages 260 metres in width. The channel bed has been constantly dredged since liberation, providing a draught of over 8 metres.[33] Ships up to 10,000 tons can reach Minhsing on this major waterway and berth along the town's waterfront. This provides a cheap means of transportation for shipping raw materials for and finished products of Minhsing's industry. The site possesses another natural advantage: the terrain is level, but it lies above the highest recorded flood level. Thus, no expensive engineering project for flood prevention was required. The industrial satellite was connected directly with Shanghai by a 32.5

kilometre high-quality motor road built in 1958. The north-south oriented transport artery branches off Chung Shan Road West in Shanghai, passing through the industrial district of Tsaohoching, the towns of Muilun, Hsinchung, Kuchiao and Pehchiao before reaching Minhsing. By means of this new Shanghai-Minhsing Highway, the travel time between Shanghai and its new satellite town is only about 25 minutes.[34] Other additional favourable factors include the availability of power and water supply, roads, urban infrastructure and public amenities [35] (Photo 8II).

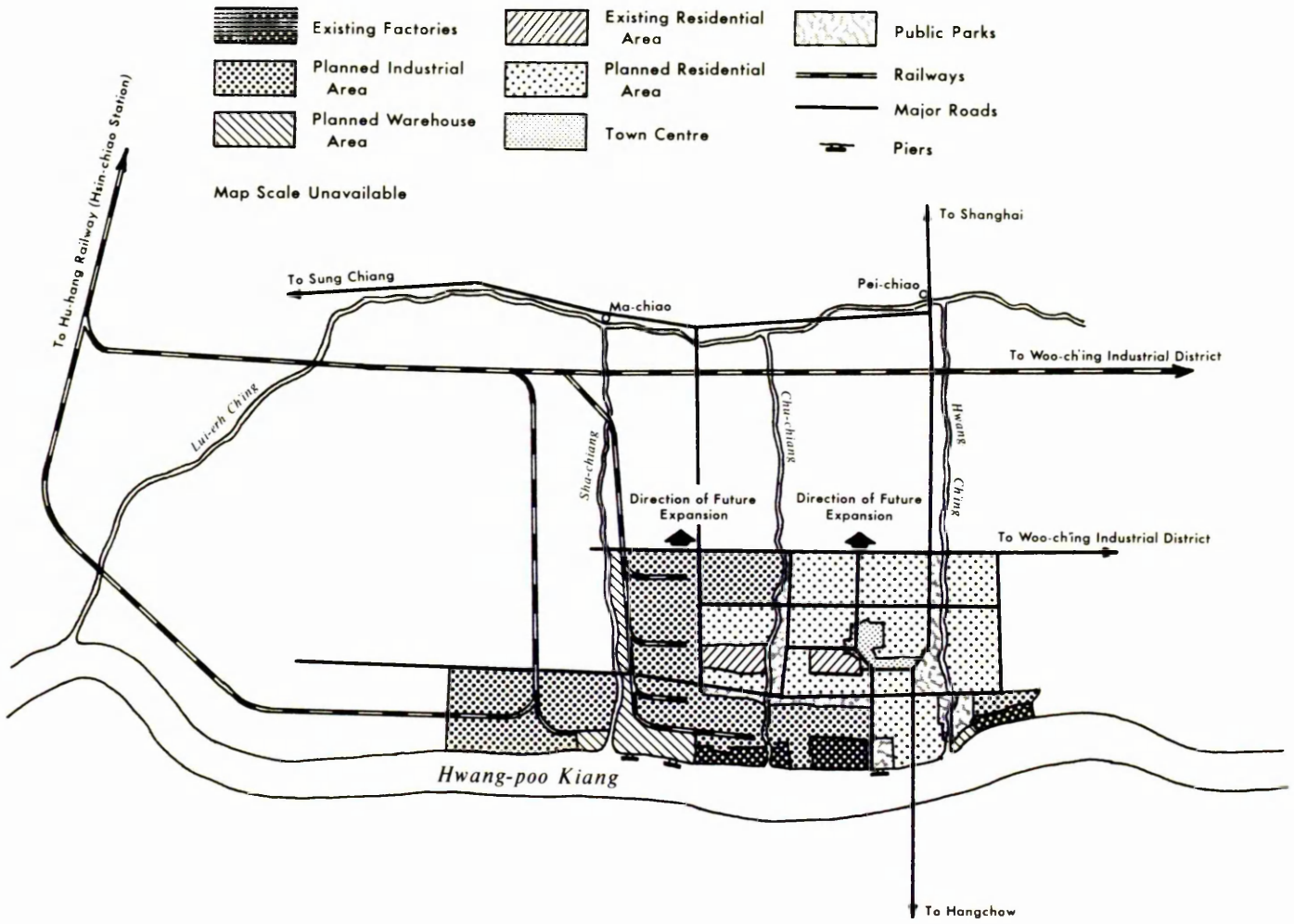
According to the preliminary land use plan of Minhsing, a total area of 1,162.1 hectares of land located at the existing townsite was earmarked for immediate development. This included 351 hectares for industrial use, 109 hectares for transportation and warehouse construction, 50.6 hectares for public park development, and 651.5 hectares for residential use, public buildings, open space, roads and public squares.[36] As Minhsing's population in 1957 was 33,000,[37] the amount of urban space (excluding industrial land) per 1,000 inhabitants as designated in the plan would be about 53.2 acres, which was almost equivalent to that for the British new towns, at an average of 54 acres per 1,000 population. The plan restricted future growth of Minhsing's population to 300,000, and it directed all major spatial developments towards the north of the settlement[38] (Map 8B).

This first satellite town of China was designated a heavy industrial centre in the City Region of Shanghai. According to data collected in the field before 1949 Minhsing



8II. An Aerial View of Minhsing - Shanghai's First Satellite Town.

PRELIMINARY TOWN PLAN OF MIN-HSING 1958



had only 3 small workshops, manufacturing and repairing simple farm implements and repairing electrical machinery.[39] The General Machinery Plant, the only industrial establishment at that time, occupied a floor space of 9,417 square metres. In 1957 the amount of floor space for new industrial enterprises expanded to over 310,000 square metres.[40] A number of large modern industrial plants, including heavy machinery factories, metallurgical plants and Shanghai's largest integrated iron and steel works were under construction in 1958. In the following year, further industrial developments included the construction of an electrical machinery plant, a turbine manufacturing plant, a boiler factory, a heavy lathe factory, a thermal power station and a modern waterworks.[41]

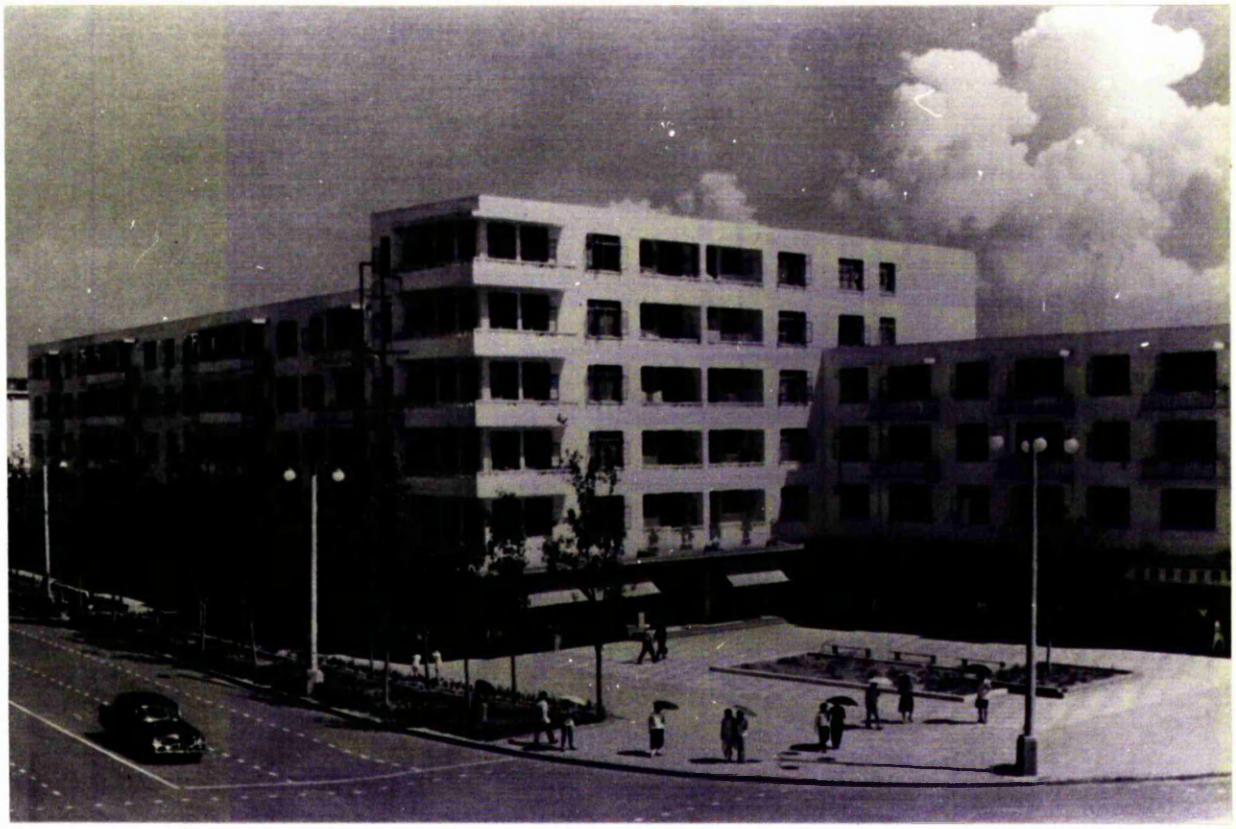
Concurrent with industrial construction, residential housing was built at a rapid pace to accommodate an increasing number of factory workers and their families who moved from Shanghai to the satellite town. In 1959 the Tungfeng (East Wind) New Village at First Street and the Hungch'i (Red Flag) New Village at Second Street were completed. These were two of the six large workers' housing projects with a total dwelling space of one million square metres to be built in Minhsing and other suburban industrial districts in 1959.[42] Meanwhile, the construction of urban infrastructure and public amenities was also in progress, adding 13 principal buildings along First Street, the main street in Minhsing. The major additions comprised general stores (and even a specialty shop for women's and children's goods), cinemas, barbers shops, a public bath, a large market encompassing

grocers, butchers and coal merchants, as well as a general hospital with 300 beds (Photo 8III). Upon completion this main street of Minhsing would rival the two east-west thoroughfares in the heart of Shanghai - Nanking Road and Huaihai Road. A description of Minhsing evoked an image of the ideal garden city originally proposed by Ebenezer Howard, father of the British New Towns:

> On sunny days, the buildings lining the street give the place a gay and lively air: in shades of lemon, light grey and other bright colours, and each with its own distinctive style, they stand out in bold relief against the rows of newly planted trees and blue sky. First Street is 44 metres wide, twice the width of Nanking Road. There are two malls close to the sidewalk and sauntering down the boulevard one feels as though (one) were walking in a park rather than along the town's busiest street. Here, shops are interspersed with apartment houses; it is a busy street but without the usual hustle and bustle characteristics of a shopping centre.[43]

Suburban Satellites and Urban Population Redistribution

The establishment of the Shanghai City Region in 1958 offered the planners greater flexibility in decision making in planning for subsidiary food supply (see Chapter 6) and for the decentralization of industrial activities and population from the congested central city. The building of "secondary centres" afforded more options for siting new industrial projects to be installed in the municipality during the Great Leap Forward. Of utmost importance, these satellites were designed as recipient points for urban residents transferred from the parent city, and thus played a vital role in the spatial redistribution of urban population within the city region.



8III. At the Centre of Minhsing.

Since its opening as one of the five treaty ports in 1842, Shanghai rapidly developed into a primate city. By 1910 it had already become China's most populous urban place in modern times, with a population of 1,185,859.[44] The city's population continued to climb in the following decades. It increased to 2.3 million in 1925,[45] and 3.7 million in 1936.[46] By 1947 it reached 4.4 million, well over twice that of Tientsin, the second largest city, with a population of less than 2 million.[47] At the time of the Communist take-over, Shanghai's population had increased to 4.5 million.[48]

The history of population control in the form of organized emigration from Shanghai began early in 1950 when an outbreak of serious natural disasters in eastern China drove a large number of refugees into the city. The Military Control Commission implemented a plan involving mobilization of over one million unemployed and refugees to leave the city. Special offices of the Provincial Communist Party headquarters in Shantung, Anhwei, Chekiang and Kiangsu were established, assisting resettlement of returned refugees.[49]

Another method of reducing Shanghai's population has been to send young intellectuals to frontier areas. The initial systematic mobilization of university graduates began in 1951. Jao Shao-shih, the local party secretary, also secretary of the East China Bureau of the Central Committee and member of the Government Administrative Council, launched the programme of "unified allocation" of employment opportunity for university graduates and urged them to accept state assignments at any location in China.[50] In

1952 Shanghai began to send secondary school and primary school graduates to the industrial Northeast. About 1,000 secondary school leavers were sent to Shenyang; other destinations included Kansu, Tsinghai and the Sinkiang Uighur Autonomous Region in the remote northwest.[51] The relentless efforts of the city administration were frustrated by the continuous inflow of peasants, however. According to the only modern national census, the population of Shanghai in 1953 was 6,204,417. Inevitably, further measures were taken to tighten control over population movement. The First People's Congress in Shanghai launched a campaign to send ordinary citizens to the interior regions to participate in national industrial and agricultural production.[52] Other emigration from the city was related to the industrialization of inland areas. Throughout the First Five Year Plan period, Shanghai continued to draw on its large pool of skilled labour to assist in the development of other industrial centres in the nation. In June 1953 at the request of the Shanghai People's Government and the Shanghai Labour Union, 11,295 skilled metal workers participated in key-point projects in the interior, and 2,098 factory workers left the city for the northeast, north China, and central-south China.[53] From 1950 to the first quarter of 1956, Shanghai dispatched 210,000 workers and cadres, of whom 63,000 were skilled workers and about 5,400 technicians.[54] By January 1957 there were already at least 100,000 Shanghai residents in Sian and another 30,000 in Lanchow,[55] both being important key-point cities in Shensi and Kansu respectively. At the beginning of the national Great Leap movement, Hsu chien-kuo

deputy mayor of Shanghai, informed at the Third Meeting of the Second People's Congress that 1,080,000 had left the city in the previous seven years. Of these emigrants, 780,000 were returned to rural production, over 260,000 were sent to participate in economic construction, and about 30,000 took part in reclamation projects in other provinces.[56] It may be argued that up to mid-1956 the municipal authorities had achieved some success in controlling population increase caused by immigration, as the rate of population growth in Shanghai was much lower than that in other key-point cities as well as most of those not designated for active economic expansion (see Table 6.1). In fact, two-thirds of the increase from 1949 to mid-1956 was brought about by the high average annual rate of natural increase of 36.8 per thousand (Table 8.4) - almost twice that of the national average.[57]

TABLE 8.4 Natural Increase Rate of Shanghai's Population 1953-1957.

Year	Birth Rate	Death Rate	Natural Increase Rate
1953	40.4	9.9	30.5
1954	52.6	7.6	45.0
1955	41.4	8.1	35.3
1956	40.2	6.7	33.5
1957	45.7	5.9	39.8
		Average:	36.8

Source: Chandrasekhar, S., China's Population: Census and Vital Statistics, 2nd edition, revised and enlarged, (Hong Kong: Hong Kong University Press, 1960), p.54.

The failure in accomplishing a better result in reducing the city's population was caused by problems

relating to sending permanent residents out of the city. First of all, the municipal government found it increasingly difficult to mobilize industrial workers and construction labourers after late 1955. Factory administrative cadres were often reluctant to release engineers and skilled workers who responded to the call of the central government to aid socialist construction in other parts of China - or so a secondary source alleged.[58] Also the higher real wages in Shanghai might have presented another obstacle in the mobilization of the city's workers to emigrate to other industrial centres. Some workers were unwilling to leave their job in the city on account of the loss of actual income upon emigration. An editorial appeared in a local newspaper on 14 August 1956, appealing for reduction of workers' wages in Shanghai in order to facilitate the dispatch of industrial workers to support construction of new industrial bases in the inland regions:

> If no adjustment is made to wages in Shanghai, there will be difficulties in distributing the labour force to support state construction. Wages in Shanghai should be reduced to a level of parity with those in other areas, and adjusted in accordance with the gradual unified rationalization of wages in the nation.[59]

Apart from factory workers, university and school graduates, permanent residents who left the city included those who "voluntarily" participated in wasteland reclamation in remote frontier areas. During the early 1950s the central authorities were quite optimistic about the amount of virgin land which could be brought under cultivation, claiming that the amount of unused land equalled that of the total existing cultivated acreage at that time.[60] In

1956 an ambitious nation-wide drive was launched to reclaim wasteland of the frontier provinces of Heilungkiang and Kirin, and the Autonomous Region of Sinkiang. The first organized and planned interprovincial migration of population was initiated. The total number of migrants involved in wasteland reclamation reached over 725,000 in 1956, which exceeded that during the entire period from 1949 to 1955. Over 433,000 of these migrants left the densely populated provinces of Shantung, Honan, Hopeh and the three special municipalities of Peking, Shanghai and Tientsin for Heilungkiang, Kansu, Tsinghai, Kiangsi and the Autonomous Regions of Inner Mongolia and Sinkiang.[61] Reclamation of wasteland in China relied heavily on manual labour; however, the state must have invested a substantial amount of capital for these projects. The migrants were given travel and living allowances and provided with housing and amenities in the new settlements. As these wastelands were located in areas with marginal soils and extreme climates, the results of reclamation were far less promising than anticipated. Despite the claim that five million hectares of arable land were reclaimed during the First Five Year Plan period, the actual total increase of arable land derived from reclamation averaged less than one per cent of the cultivated acreage at that time. Low productivity of the newly reclaimed land and need for more capital input made further land reclamation in the frontier areas uneconomical. The scheme was consequently abandoned in the spring of 1957.[62] Although the total number of Shanghai residents who had been sent to other provinces to reclaim land totalled not more than 40,000 during the entire

period 1949-1957, the abandonment of the land reclamation programme closed a possible avenue to siphon off part of Shanghai's unemployed or non-productive residents.

Between June 1956 and October 1957 Shanghai's population underwent a sharp increase. It grew from 6.02 million to 7.2 million. According to the municipal record, of these about 60,000 secured temporary permits to stay in the city, about 300,000 were attributable to natural increase, and 820,000 drifted into the city from other areas.[63] Most of these immigrants were peasants from the neighbouring provinces of Anhwei, Kiangsu and Chekiang.[64] Previous influxes of peasants were partly motivated by the outbreaks of natural disasters in 1950, 1954/55 and early 1956,[65] and the high tide of collectivization in agriculture in 1955. The exceptionally large inflow that occurred between June 1956 and October 1957 must have been caused by the 1956 nationwide upward adjustment of wages for industrial workers and other employees in cities (Table 8.5), and the active industrial expansion in Shanghai. There was evidently a direct link between the urban economic expansion and the influx of peasants into cities. By way of comparison, early in 1958 the central government invested a substantial amount of capital for industrial construction in Canton (a coastal city in south China not designated for economic expansion during the First Five Year Plan period), thereby creating 100,000 jobs. In that year over one million peasants migrated into the city to search for employment opportunities.[66]

Confronted by the problems of swelling population in the city, the civil administration employed several

TABLE 8.5 Increase in Average Annual Wage of Workers and Other Employees 1952-1958 (in yüan)

	Average Annual Wage	Index Numbers 1952 = 100	Index Numbers Preceding Year=100
1952	446	100	-
1953	496	111.2	111.2
1954	519	116.4	104.6
1955	534	119.7	102.9
1956	610	136.8	114.2
1957	637	142.8	104.4
1958	656	147.1	103.0

Source: Wei-tai ti shih-nien, (The Ten Great Years), op.cit., p.90.

regulatory measures to curtail further increase. Among these the authorities included stricter household and job registration, stern rationing of staple commodities, and vigorous promotion of birth control and family planning. At the Third Session of the Second People's Congress, the deputy mayor called for limiting the population of the city to 7 million.[67] Since late 1957 and early 1958, besides returning peasant immigrants to the rural areas, the city began to "send down" (hsiafang)[68] administrative cadres and to return families of the military stationed in Shanghai to their native villages.[69] A local press source reported the sending down of 140,000 administrative cadres to the city's suburban areas to take part in industrial production, basic construction and basic level commercial work.[70] Their destinations were most likely suburban industrial districts and the satellite town of Minhsing which were under intense development at that time. Evidently, the campaign continued throughout the period of the Great Leap. More cadres were

sent out to suburban towns and communes. In the spring of 1959, over 2,400 became factory workers and construction labourers in satellite industrial communities. Most of these cadres were young and educated, but had no experience in manual labour and basic level work.[71] As part of the population control measures, the city government provided subsidies to school graduates who settled down permanently in the suburban areas.[72] When the Great Leap Forward began, new industrial developments of the metropolis were sited at small, functionally integrated and self-contained settlements in the city region. The decentralization process often involved both factories and their workers, as most factories were responsible for housing their work force. Construction of workers' villages at suburban locations played an important role in dispersing Shanghai's population. In August 1959 the Shanghai Bureau of Municipal Construction and Administration completed the Haipien New Village at Woosung, the Szutang New Village at Yunchopien, the Pengpu New Village at Pengpu, the Shangchien New Village at Chaochiatao, and the Hungch'i New Village and the Tungfeng New Village at Minhsing.[73] Each of these housing estates possessed a large variety of shops, urban infrastructure and public facilities.[74] By the end of 1959 a total number of 34 workers' villages had been completed [75] (Photo 8 IV). Since the establishment of the first satellite town in 1958, more "decentralized settlements" have been built in the city region. By the early 1960s six satellite communities had been completed and five more were under construction.[76] A team of British urban planners visiting Shanghai in 1974 reported that there were between 60 to 70 satellites in the suburban areas.[77] These small self-contained urban centres

8IV. Workers' Housing in Minhsing.

permitted rationalization of industrial location and served to absorb the surplus population in Shanghai. For example, in 1949 Minhsing was a small settlement with a population of only 6,000, but in 1957 it increased to 33,000.[78] Almost two decades later, as a result of planned dispersal of population from the central city, the number of inhabitants in the satellite town grew to over 70,000. Since the Cultural Revolution the population in urban Shanghai has been reduced by over 800,000 as the municipal authorities launched a new campaign to send youths to the suburban areas and other provinces. In 1976 out of the total population of 10.7 million in the city region, 5.23 million inhabited the central city, and most of the 5.47 million the suburban industrial satellites.[79] The reduction of population in the central city by nearly one million below the 1953 census figure of 6,204,417, and the reciprocal increase in the suburban areas convincingly indicate the achievement of planned spatial redistribution of population within the city region of Shanghai.

CHAPTER 8 - NOTES

1. According to Osborn, the term satellite town was first used in Britain in 1919 as an alternative description of Welwyn Garden City, one of the first new towns built in the country. This term is better reserved for a garden city or country town, located at a moderate distance from a large city, but physically separate from that city by a country belt.

   See Osborn, F.J., Greenbelt Cities, (London: Evelyn, Adams and Mackay, 1969), p.182.

2. Development of satellite towns in other city regions was cited in Chinese publications appeared in 1958-1960, and in western sources in later dates. These city regions were Hofei[a], Chengchow,[a] Tientsin,[b] Nanking,[b] Tsinan,[c] Hantan,[d] Ch'angch'un,[e] Peking,[f] Canton,[f] Changsha[g] and Taching[h].

   Sources:

   a Chien-chu hsüeh-pao (Journal of Architecture), no.11, 1959, op.cit., p.20; hereafter: CCHP.

   b Chang Hsu-tang, "Minhang-Shanghai's First Satellite Town", Peking Review, 16 February 1960, p.17.

   c CCHP, no.11, 1959, op.cit., p.16.

   d Kung Chi-fen (Hantan Urban Construction Bureau), "Hantan Today", Ch'eng-shih chien-she (Urban Construction), no.10, 14 October 1959, p.40; hereafter: CSCS.

   e "Fei-yeo-ch'ung ti Ch'ang-ch'un", TLCS, no.11, 1959, p.538.

   f Galston, A.W., et al., Daily Life in People's China, (New York: Thomas Y. Crowell, 1973), p.133.

   g Thompson, R., "Containing the City", Architectural Design, March 1974, p.152.

   h Murphey, R., "Chinese Urbanization Under Mao", in Berry, B.J.L.,(ed.), Urbanization and Counterurbanization, vol.11, Urban Affairs Annual Reviews, (London, Beverly Hills: Sage Publications, 1976), p.324.

3. Peng Ch'i-shih, "On the Basic Principles of Satellite Town Planning", CSCS, no.7, 1957, p.11.

4. Chang Sen-dou, "The Million City of Mainland China", Pacific Viewpoint, vol.9, no.2, September 1968, p.149.

5. Hsu Shih-p'ing, (1959), op.cit., p.2.

6. Tso, op.cit., p.4.

7. Shih-sh'i shou-t'se (Current Affairs Handbook), 1958, p.50.

8. Wei-ta ti shih-nien, op.cit., pp.57-58.

9. Hsin-wen jih-pao (News Daily), 28 Aug. 1957; hereafter: HWJP.

10. Shih Tien, "Study of Problems on the Scale of Urban Development", Chi-hua ching-chi (Planned Economy), no.1, 1958, p.19; hereafter: CHCC.

11. CSCS, no.8, 1957, p.29.

12. CSCS, no.6, 1957, p.9.

13. Mao Tse-tung, Mao Tse-tung ssu-hsiang wan-shui, (Long Live Mao Tse-tung's Thought), (Facsimile of the pirate copy of the 1967 edition),(Hong Kong: publisher unknown, 1975), p.226. Italics added by the author.

14. HWJP, Shanghai, 7 November 1956.

Note: It is a common practice that percentages are given without a base value. However, they provide an indication of relative increase in value.

15. Chieh-fang jih-pao (Liberation Daily), Shanghai, 7 June 1959; hereafter CFJP.

16. Wu Yuan-li, "Principal Industrial Cities in Communist China: Their Regional Distribution and Ranking", in E. Stuart Kirby, (ed.), Contemporary China, vol.5, no.1, (Hong Kong: Hong Kong University Press, 1963), p.17.

17. Interview, 21 June 1977.

18. CFJP, Shanghai, 6 June 1959.

19. New China News Agency, Shanghai, 20 July 1959; hereafter: NCNA.

20. As substantiated by literary evidence, satellite towns had been part of the suburban landscape in ancient China. The earliest satellite settlement in the Middle Kingdom was built in the Shang dynasty (c.1500 B.C.). It was a separate walled settlement developed outside the south-east city gate of Linfeng (present day Pengyang in Shansi province). Some of these walled satellites, such as that at the southeast of Fenyang in Shansi, built in the Han dynasty, were as large as the mother city, suggesting a very rapid rate of population increase.

See Shina jokaku no gaiyo (Essence of Chinese Cities), op.cit., p.90.

21. Wen-hui pao (The Cultural Contact Daily), Shanghai, 18 February 1958; hereafter: WHP.

22. Interview, 21 June 1977.

23. Ch'ien Sen-t'ieh (Shanghai Institute of Urban Planning and Design), "The Planning Problems of Shanghai's Satellite Towns", CCHP, no.8, 1958, p.31.

24. Ibid.

25. The New Towns of Britain, Central Office of Information Reference Pamphlet 44, (London: Her Majesty's Stationery Office, 1964), pp.11-12.

26. Ibid., p.9.

27. WHP, 10 January 1959.

28. HWJP, 8 September 1959.

29. HWJP, 7 December 1959.

30. HWJP, 17 April 1959.

31. WHP, 1 December 1959.

32. WHP, 10 January, 1959, op.cit.

33. Sun Ching-chih, et al., Hua-tung ti-ch'ü ching-chi ti-li (Economic Geography of East China Region),(Peking: K'o-hsüeh ch'u-pan-she, 1959), p.47.

34. Interview, 21 June 1977.

35. Ch'ien Sen-tieh, op.cit., p.32.

36. Ibid., p.31.

37. Interview, 21 June 1977.

38. Ch'ien, op.cit., p.32.

Note: According to the guidelines on population size of cities set by the central government 300,000 was the limit and only permitted in very important economic centres. See Chapter 6.

39. Interview, 21 June 1977.

40. Nu Shu-chai (deputy mayor of Shanghai), "Great Victory for the General Line in Shanghai's Basic Construction", CFJP, 8 September, 1959.

41. CFJP, 1 September 1959.

42. HWJP, 7 August 1959.

43. Chang Hsu-tang, op.cit., p.17.

44. Chang Sen-dou, (1968) op.cit., p.147.

45. Murphey, R., Shanghai; Key to Modern China, op.cit., p.162.

46. Chen, C.C., "Urbanization in China", The Geographical Review, January 1973, p.67.

47. Trewartha, G., "Chinese Cities; Numbers and Distribution", Annal of the Association of American Geographers, vol. 41, no.4, December 1951, p.338.

48. Djerassi, C., "Some Observations on Current Fertility Control in China", China Quarterly, no.57, p.54.

49. HWJP, 14 February 1950.

50. NCNA, Shanghai, 26 July 1951.

51. CFJP, 13 September 1952.

52. HWJP, 3 August 1955.

53. WHP, 3 September 1954.

54. HWJP, 8 August 1956.

55. HWJP, 21 January 1957.

56. WHP, 7 January 1958, op.cit.

57. The national average for natural increase from 1949 to 1956 was 21.3 per thousand. See Orleans, L.A., Every Fifth Child: The Population of China, op.cit., p.30.

58. China News Analysis, no.95, 12 August 1955, Hong Kong, p.3.

59. HWJP, 14 August 1956.

60. Jen Ti-ti, A Concise Geography of China, (Peking: Foreign Language Press, 1964), p.74. Jen cited that there were 1.07 million square kilometres of farmland and 1.13 million square kilometres of reclamable wasteland.

61. Shen-yang jih-pao, Shenyang, 30 December 1956.

62. Sung Shao-wen, "The Principle of Diligence and Economy in Economic Construction", Hsüeh-hsi (Study), no.11, June 1957, p.22.

63. WHP, 7 January 1958, op.cit.

64. HWJP, 4 March 1957.

65. For an extensive geographical research on China's natural disasters which occurred between 1949 and the end of the "three bitter years" (1959-1961), see Freeberne,

M., "Natural Calamities in China, 1949-61: An Examination of the Reports Originating from the Mainland", Pacific Viewpoint, vol.3, no.2, September 1962, pp.33-72.

66. NFJP, 18 September 1957.

67. WHP, 7 January 1958, op.cit.

68. Hsiafang is a Chinese communist term meaning "downward transfer" or "sending down". It first appeared in Chinese newspapers and official publications in early October 1957. Hsiafang was a nationwide campaign initially designed to trim excess administrative personnel in government bureaucracies. Since late 1957 thousands of cadres were sent from major cities to rural areas as well as factories in smaller urban centres. It was believed that their participation in physical labour would toughen their revolutionary spirit as well as their body. During the national Great Leap movement, hsiafang acquired a diverse connotation; the campaign included sending down of cadres, young intellectuals, and urban residents to rural and suburban areas. Later the term "hsiafang" was often used interchangeably with "shang-shan hsia-hsiang" which literally meant going up the mountain and going down to the villages.

69. CFJP, 23 April 1958.

70. HWJP, 1 December 1958.

71. CFJP, 25 April 1959.

72. CFJP, 15 November 1957.

73. HWJP, 7 August 1959, op.cit.

74. HWJP, 6 September 1959.

75. CFJP, 30 October 1959.

76. Snow, E., The Other Side of The River, (New York: Random House, 1961), p.539.

77. Thompson, R., op.cit., p.152.

Note: All satellite towns and industrial districts in the Shanghai City Region may be detected and identified in the infrared-band (band no.6) satellite imagery of 21 October 1976 (see p. 293, Chapter 6). These satellites of Shanghai appeared as relatively large dark-toned spots against a light grey background of agricultural crops. Yunchopien, located at the confluence of Yunchopien (name of creek) and Hwangpoo Kiang, to the north of Shanghai seemed to have undergone rapid expansion. It appeared to occupy a much larger area than any other satellite settlements in the entire region.

78. WHP, 11 February 1957, op.cit.

79. Interview, 21 June 1977.

CHAPTER 9

CONCLUSIONS

In China when industries and cities underwent rapid development during the early part of the First Five Year Plan period, urban sprawl was widespread in the major industrial centres. This disorderly growth pattern in the suburban areas was not caused by prevalence of land speculation, spread of middle-class suburban residences, increase use of private motor vehicles, building of squatter settlements and lack of coordination among various levels of administration, as it might have been outside China. Instead, the difficulties in land use planning in the suburban areas resulted from the contradiction between the national goal of achieving rapid industrialization and modernization and the paucity of planning resources, as well as the absence of effective legislation for the requisitioning and disposal of suburban land. The problems were exacerbated by the uncritical acceptance of Soviet urban planning principles and approaches which were not suitable to Chinese conditions.

To the Chinese, cities play important roles as growth centres and hold the key to modernization. However, it became apparent that in order to avoid the undesirable effects of uncontrolled urbanization, excessive spatial growth and population increase in metropolitan centres must be arrested. The building of small and medium-sized cities has been encouraged. At the same time there has been a tendency in larger cities towards dispersal of the population to the suburban areas and of decentralization of all

new industrial developments to self-contained satellite communities. The implementation of this new policy is not "anti-urbanism", as postulated by a China scholar writing on China's urban development.[1] There is no evidence to support such a conclusion. On the contrary, the move towards urban decentralization after mid-1956 reflects the realistic attitude of the leadership in recognizing errors and shortcomings. Moreover, this new thinking in urban developmental design represents an emergence of a revolutionary concept of urbanism - part of a grand scheme to achieve the ideological goal of breaking down the distinction between city and countryside, industry and agriculture and mental and manual workers. Indeed, this policy has led to the development of a new type of human settlement of which Taching provides a classic example. Since the discovery of oil in 1959 in the bleak wasteland in Heilungkiang province in Northeast China, Taching, a small settlement at the site, has grown into a large population centre with 400,000 inhabitants. At the settlement oil extraction, residential functions, and agricultural activities have been integrated spatially, successfully blurring the distinction between the urban and the rural sectors. Outside Taching six satellite towns have been established to avoid concentration of industrial functions and population. The thriving spring wheat production and horticulture at this famous oil field have achieved self-sufficiency in staple and subsidiary foods in the agrapolis.[2] It should be stressed that the Chinese approach in building small cities and containing the growth of large ones is in contrast to the urban policy of the Soviet Union where the main criterion of successful

development policy has been the size of urban and industrial expansion, so that the city is bound to maintain its dominant position over the countryside.[3]

Within China's city regions the market garden zone that encircles the metropolitan cities and their satellite communities serves the dual purposes of supplying vegetables and subsidiary foods to urban residents and containing the spatial growth of urban centres. For almost two decades since its inception this horticultural belt has remained a permanent and conspicuous landscape feature in suburban China.[4] It has served as an almost impregnable "green wall" stabilizing the urban fronts that had once advanced in utter confusion into the surrounding countryside. While there has been a state policy to locate as few industrial activities as possible in the central city, any expansion of a satellite town beyond its planned area is restricted. In the satellite town of Minhsing, for example, regulations for restricting the conversion of market gardening land in the suburban communes into industrial or other non-agricultural uses have been strictly enforced.[5]

With the advent of the "Four Modernizations" after Mao's death in September 1976, many existing major industrial complexes in China have been renovated or expanded, often by imported technology. As part of the Sino-Japanese long-term (1978-85) Trade Agreement signed in Peking on 16 February 1978, a modern integrated steel mill would be constructed in Shanghai by Nippon Steel. Deliberately avoiding industrial concentration of existing industrial districts or satellite towns specializing in steel production, municipal authorities of the Shanghai City Region have designated Yüehpu, a small

town located on the southern bank of the Yangtze River, as the site for this steel plant with its own power station, environmental protection facilities and a loading and unloading wharf.[7] Upon completion of the project the industrial map of the city region will be modified.

It should be noted that current planning guidelines for urban development continue to emphasize avoidance of wasteful use of land.[8] In many instances, municipal and industrial projects have been sited on hilly terrain, or in places unsuitable for cultivation. The huge complex of the Peking General Petrochemical Works with self-contained workers' housing and amenities was located in a mountainous area lying to the northwest of the capital.[9] At Hsinhui in Kwangtung province, the planning committee located new industrial developments on the lower hill slopes to avoid loss of valuable agricultural land. At the same time wasteland has been reclaimed and ponds have been filled to provide sites for parks and recreational areas. Also, an increasing number of industries have been dispersed to the suburban communes, thereby limiting areal expansion of the city, reducing production costs and minimizing the differences between city and country.[10] Efforts to spare existing agricultural land are also evident in Tientsin as the city has been building industrial projects on waste alkali land near the sea.[11]

Experiments have been carried out in housing construction to economise use of urban land, despite considerable success achieved in stabilizing the population in large cities. In 1977, three units of fourteen-storeyed apartment

for workers were constructed, for experimental purposes, in the light industrial district of Chiangmiao in the north-western part of urban Shanghai. Since then, the building of high-rise structures for economizing use of urban land has remained a subject for debate among urban planners and architects. Many of them still argue that the need to use elevators in tall buildings increases the demand for energy consumption. Recently, an innovative approach in architectural design of workers' housing known as "chin-shen" has been introduced. This is a design method to induce an optical illusion of a larger inner residential space in buildings. The idea has received favourable reactions among urban architects and city planners.[12]

The spatial restructuring of urban and agricultural land use in the city-centred planning units revives the urban-rural symbiosis which is traditional to Chinese society. Specifically, the establishment of a vegetable production belt around the central city and outside its satellite communities is a significant development toward that goal As exemplified by the City Region of Shanghai, the multi-nodal pattern of settlements has aided the diffusion of technological innovation in the suburban area. The spread of farm mechanization and electrification, and the increased use of chemical fertilizer certainly have contributed to the rapid rise in agricultural production, thereby greatly enhancing the guarantee of self-sufficiency, at least in subsidiary food supplies, for all the urban settlements within the city region (also the Chinese have been striving to achieve self-sufficiency in grains within the city

regions). In addition, the growth and diversification of agriculture have increased the income level and raised the standard of living of commune members.

While the Chinese claim that they are still struggling with some resistant problems relating to unified urban-suburban planning and development,[13] it is certain that the city region experiment has succeeded in containing the urban sprawl and in promoting the efficient use of suburban agricultural land resources, resulting in self-sufficiency in subsidiary food supply in large industrial cities, a reduction in costs of urban construction, an increase in social and economic interaction between city and countryside, improvements in the urban environment and the transformation of foreign-dominated treaty ports and "consumer cities" into socialist "producer cities".

It appears evident that the concept of city region which emerged in 1956 is a Chinese innovation. Putting this concept into practice represents a major departure from the Soviet model of urban planning which the Chinese adopted in the early part of the First Five Year Plan period. It is indeed a significant indigenous planning effort, because during the late 1950s and early 1960s, many senior Soviet urban architects (planners) were still advocating strongly the extension of administrative control of municipal governments over their suburban territory, and the need for unified planning of the suburban areas and the central city.[14]

China's city region may be conceived as a spatial model representing an amalgamation of Patrick Geddes' concept of unified administrative and planning at the local

level,[15] Ebenezer Howard's idea of self-contained new towns that restore the balance between urban and rural life,[16] Marxist-Leninist theories of close links between industrial and agricultural production[17] and Mao's ideals of self-sufficiency and self-reliance.

The internal structure of the spatial model includes primarily a central city and its suburban area. The latter, which is placed under the jurisdiction of the former, can be divided into two zones: the area that girdles the central urban node is an intensively cultivated market garden zone. It is known as the "near suburb" (chin chiao-ch'ü). In terms of spatial form and proximity to the central city, this horticultural zone bears a close similarity to the innermost circle of von Thünen's model. The other area lying farther from the central city is known as the "far suburb" (yüan chiao-ch'ü). The types of agricultural production in this zone are mainly grains and economic crops. Within the suburban territory are scattered self-contained satellite towns that serve as recipient centres for the industries and population dispersed from the central city.

Conceptually, the suburban area of the city regions of China is not created by "urban invasion". Also it is not a zone of active land use competition that characterized its counterpart outside many western cities. In contrast, it is a unified administrative and planning entity on a small regional scale, instituted for achieving certain ideological and economic objectives.

Without doubt, like the experiments in agricultural communization, the bare-foot doctor national health system,

the "hsiafang" movement , rural industrialization and mass mobilization of labour, the city region strategy is a remarkable and unique achievement. The Chinese experience in unified urban and regional planning demonstrates that, with proper control and spatial planning of both urban and agricultural land use in the suburban areas of city regions, as exemplified by Shanghai, excessive spatial growth of urban centres and undue loss of suburban farmland can be avoided. Therefore, despite the pessimistic outlook on the world's rapidly dwindling arable land, expressed by the delegates at the recent International Union for the Conservation of Nature and Natural Resources Conference (see Chapter 6), the Chinese offer some hope to mankind with regard to conservation of agricultural land resources. In addition, the Chinese have succeeded in creating a more acceptable and durable suburban environment.

Certain China scholars claim that some of China's innovations, such as those mentioned above, might be applicable in other developing countries.[18] However, the city region system, a truly indigenous planning approach, may not be relevant to those societies. There are two main reasons for this assertion. First of all, the system is basically founded on ideology - elimination of disparity between city and countryside. Secondly, the success of the integrated urban and suburban development in China has depended upon its achievements in controlling rural-urban migration, birth control in cities,[19] absence of private car ownership, and above all, the dominance of collective interests over the interest of the individual. Nevertheless,

the Chinese wisdom of self-reliance should offer some inspirations to urban planners of the Third World nations, who have been heavily biased toward the urban experience of western industrialized countries.

CHAPTER 9 - NOTES

1. Ma, J.C.L., "Anti-urbanism in China", Focus, vol.27, no.1, September/October, 1976, pp.13-16.

2. The term "agrapolis" is coined by Christopher Salter in his article entitled: "Chinese Experiments in Urban Space: The Quest for an Agrapolitan China", published in Habitat, op. cit,, pp.19-35. According to Salter, agrapolis is exactly the type of urban centre that is offered by the Chinese as the final example of experimentation in the urban sector.

3. Kirby, R., "China's Strategy for Development", Architectural Design, March 1974, p.141.

4. During the visits of the writer to fourteen cities in China in 1977, he was impressed by the presence of lush vegetable fields immediately outside the built-up areas and the absence of sprawling developments.

5. Interview, 21 June 1977.

6. The national drive for the "Four Modernizations" was proposed by Mao Tse-tung in 1973. The programme aimed at achieving modernization of China's industry, agriculture, science and technology, and national defence by the end of the century. The theme was rei by Hua Kuo-feng, the present chairman of the CCP at the First Congress on Industry Learn From Taching, held in May 1977. The ambitious plan was implemented by Teng Hsiao-p'ing, the vice-premier, after his re-emergence in the same year.

7. The total cost of the steel plant is 1,000 billion yüan. Its annual production capacity is 3 million tons and scheduled to start production by the end of 1980. It will be the largest integrated steel plant in China.

   The Japan Economic Review, 15 March 1978, p.4.

8. The Design Institute of Exploration and Industrial Buildings of the Tibetan Autonomous Region, "New Aspects of Construction in Lhasa", Chien-chu hsüen-pao (Journal of Architecture), no.4, 1976, pp.6-8; hereafter: CCHP.

9. Hsin chung-kuo chien-chu (The Architecture of New China), (Peking: Chung-kuo chien-chu kung-yeh ch'u-pan-she, 1976), no pagination.

10. The Town Construction Committee of Hsinhui County, Kwangtung province, "The Planning and Construction of the Prefectural City of Hsinhui County", CCHP, no.3, 1973, pp. 8-12.

11. New China News Agency, Tientsin, 26 December 1974, p.1.

12. Chang Kai-chi, "To Improve the Design for Residential Buildings and Economize Land for Construction", CCHP, no.1, 1978, pp.14-20.

13. Interview, 21 June 1977.

14. Kucherenko, V., "Several Questions Concerning Urban Development in the Soviet Union". In "The Future of Our Cities", Pravda, 1 June 1960. Translated in Current Digest of Soviet Press, vol.12, no.23, 6 July, 1960, pp.23-26.

15. Geddes, P., Cities in Evolution: An Introduction to the Town Planning Movement and to the Study of Civics, (London: Williams and Norgate, 1915).

16. Howard, E., Garden Cities of Tomorrow, (London: Faber and Faber, 1902).

17. Khorev, B.S. and D.G. Khodzhayev, "The Conception of a Unified System of Settlement and the Planned Regulation of City Growth in the U.S.S.R.", Soviet Geography, no.8, 1972, pp.90-98.

18. Murphey, R., "Aspects of Urbanization in Contemporary China: A Revolutionary Model", Association of American Geographers Proceedings, vol.7, 1975, p.168.

    Imfeld, A., China As A Model of Development, (Translated by O'Connell, M.J.),(New York: Orbis Books, 1976).

    Sigurdson, J., (1977), op.cit., pp.224-225.

19. In 1974 the birth rate in the City Region of Peking was 18.8 per thousand (15 in the city and 20 or more in the suburban areas). The natural increase rate was 12.4 per thousand.

    Myers, N., "Of All Things People Are The Most Precious", New Scientist, 9 January 1975, p.58.

    The record for the City Region of Shanghai was even more remarkable. The birth rate in 1965 was 17 per thousand and the natural increase rate 3 per thousand. In 1975 the birth rate dropped to 9.43 per thousand and the natural increase rate 3.42 per thousand.

    Interview, 21 June 1977.

    The birth rate in the central city was even lower. It averaged 6.4 with some districts actually attained 4 or below.

    Myers, op.cit.

APPENDIX A

SUBURBAN AGRARIAN REFORM LAW

(Approved at the 58th Meeting of Government Administrative Council, Nov. 10, 1950)

Article 1: On the basis of Article 35 of the Agranian Reform Law of the People's Republic of China, these Regulations are formulated to cope with the needs of urban reconstruction and the growth of industry and commerce as well as special conditions of agricultural production in suburban areas.

Article 2: The major cities, to carry out agrarian reform in their suburban areas in accordance with these Regulations, as well as the major industrial centres to proceed with reconstruction, shall be decided upon and promulgated by the people's governments (or military and administrative commissions) of the various administrative regions. Those within the jurisdiction of the five provinces of North China shall be decided upon and promulgated by the provincial people's governments.

The extent of suburban areas to carry out agrarian reform in accordance with these Regulations shall be defined by the municipal people's governments according to local conditions, reported to the people's government of the administrative region (military and administrative commission) concerned, and decided upon after approval by the people's government of the administrative region.

Article 3: Land holdings, draft animals, farm implements, and surplus grains possessed by landlords in suburban areas as well as their surplus houses in rural districts, shall be confiscated in accordance with the provisions in Article 2 of the Agrarian Reform Law. Other properties belonging to landlords shall not be confiscated.

Article 4: Farm land and waste land in suburban areas possessed by ancestral halls, monasteries, temples, churches, schools, institutions and public bodies shall be requisitioned in accordance with the provisions in Article 3 of the Agrarian Reform Law.

Article 5: Farm land and waste land possessed by industrial and commercial entrepreneurs in suburban areas as well as their houses originally occupied by peasants shall be requisitioned in accordance with the provisions in Article 4 of the Agrarian Reform Law. But other properties and bona fide enterprises belonging to them in suburban areas, such as private living quarters, factory buildings, and warehouses as well as rural capital investments beneficial to production should be protected against encroachment.

Article 6: Small land holdings in suburban areas rented out by revolutionary soldiers, martyrs' families, workers, government employees, professionals, pedlars and others, who

being engaged in non-agrarian occupations and/or lacking man power, shall be dealt with in accordance with the provisions in Article 5 of the Agrarian Reform Law.

Article 7: Farm land owned by rich peasants in suburban areas shall be dealt with in accordance with the provisions in Article 6 of the Agrarian Reform Law.

Article 8: Land and other properties belonging to middle peasants (including well-to-do middle peasants), poor peasants and hired farm hands in suburban areas shall be protected and not touched.

Article 9: All farm land confiscated and requisitioned in suburban areas shall be nationalized and placed under the management of the municipal people's governments and, together with other distributable farm land in suburban areas belonging to the state, shall be handed to peasants' associations of villages for unified, equitable and rational distribution, in accordance with the principles laid down in Article 11 of the Agrarian Reform Law, to peasants with little or no land for cultivation and utilization.

All production means such as farm implements, draft animals and grains acquired through confiscation shall be taken over by peasant associations of villages for unified, equitable and rational distribution to poor peasants who lack such production means, as their own property, in order to solve the shortage of production funds among peasants. All houses acquired through confiscation, except large buildings and villas in scenic centres which are not fit for peasant quarters and should therefore be retained for public use, shall be distributed to peasants as their property, in order to solve the housing shortage among poor peasants.

To landlords who have little or no income from other sources to maintain their livelihood, a share of land equal to that distributed to peasants together with necessary means of production shall be distributed for cultivation and utilization.

Article 10: In distributing land and other means of production, settlement of certain special questions concerning peasants with little or no land, should be decided according to the principles laid down in Article 13 of the Agrarian Reform Law, the conditions of the land and other means of production confiscated and requisitioned locally.

Article 11: All farm land using machinery for cultivation or having other modern equipment, agricultural experiment grounds, vegetable gardens and orchards in suburban areas, shall continue to be managed and used by the original cultivators, no matter whether they are operated by landlords or by peasants, or whether there has been any change in land ownership.

Article 12: All tillers using the state's land in suburban areas shall pay no land rent besides the agricultural tax to the state according to regulations. But tillers may not lease out, sell or lay waste the state's land. Land must be returned to the state when the original tiller does not need the land.

Article 13: In case the state takes back the state's land tilled by peasants for municipal construction and other needs, the state should make proper provisions for the peasants who till the land concerned and should make fair and proper compensation for any production investments (such as sinking wells and planting trees) on the land and other losses. Persons who need the state's land in suburban areas for building houses, factories and other works, should apply to the municipal people's government. Such measures shall be separately provided.

Article 14: In case the state requisitions farm land belonging to landlords involved in mechanical farming for municipal construction and other needs, a proper price should be paid for it or an equivalent share of state's land should be given in exchange. Proper provisions should be made for peasants who till the land in question and fair and proper compensation should also be made for any production investments on the land (such as sinking wells and planting trees) and other losses.

Article 15: On the condition that municipal reconstruction as well as famous relics and sights are not interfered with, all waste land that is cultivable should be distributed in a unified manner to peasants with little or no land for cultivation and use after approval has been given by the municipal people's governments. Reclaimers of waste land shall be exempted from payment of agricultural tax for one to three years.

Article 16: In order to strengthen the people's government leadership in agrarian reform work in suburban areas, municipal suburban area agrarian reform committees shall be, at the time of agrarian reform, set up in accordance with the provisions in Article 28 of the Agrarian Reform Law, and chü (or hamlet) agrarian reform committees may also be set up, using the chü as the unit.

Article 17: The municipal people's government shall issue certificates for the right of using the land to the peasants to whom the state's land has been allocated after agrarian reform to protect the peasants' right to the use of the land. Private owners of farm land shall be issued certificates of land ownership to protect their land ownership. All title deeds issued prior to agrarian reform become null and void without exception.

Article 18: The time to carry out agrarian reform in suburban areas of all cities shall be suggested and submitted by the municipal people's governments to the people's government (or military and administrative commissions) of administrative regions or provincial people's governments

for approval before promulgation.

Article 19: Following promulgation of these Regulations, all municipal people's governments shall formulate regulations for application, in accordance with the Agrarian Reform Law, the principles laid down in these Regulations and local concrete conditions, and submit them to the people's governments (or military and administrative commissions) of administrative regions or pronvincial people's governments for approval before enforcement.

Article 20: Except those provided for by these Regulations, which shall be treated according to these Regulations, all matters concerning agrarian reform in suburban areas shall be dealt with in accordance with the provisions in the Agrarian Reform Law.

Article 21: These Regulations shall come into force after they are approved or promulgated by the Administrative Council of the Central People's Government.

Source: Translated by the writer from Hsin-hua Yüeh-puo, (New China Monthly) vol. 3, no. 3, 1950 pp. 538-539.

APPENDIX B

REGULATIONS FOR LAND EXPROPRIATION FOR STATE CONSTRUCTION

(Approved at the 192nd Meeting [of Administrative Affairs] of the Administrative Council, the Central People's Government), 5 November, 1953.

Article 1: These Regulations are formulated to meet the need of state construction, and to present carefully and properly the problems of land expropriation for state construction.

Article 2: These Regulations shall be applicable to land expropriation for national defence construction, the building of factories and mines, railways, transportation lines, water conservancy projects, municipal construction and other economic and cultural constructions.

Article 3: The basic principles of land expropriation for state construction are: besides conforming to the actual necessity of state construction to guarantee land required for such purposes, the production and livelihood of peasants whose land has been expropriated should be properly looked after. Whenever possible, waste land, 'empty land', should be fully utilized and rich farmland belonging to the people should not be expropriated, or not in large amounts. Those construction projects which are not absolutely necessary at the present time should not be undertaken. Even important projects should not be constructed until the peasants have been resettled, or alternate locations for the construction assessed.

Article 4: The unit expropriating land should adhere to the principles of using land thriftly. It shall propose its land use plan after obtaining approval for the use of the land from its senior officer; the unit shall report to the appropriate authorities, including the administrative council of the central people's government or the administrative committee of the greater administrative district, or the people's government of the province, city or county for approval, as follows:

1. Use of land for construction of a national nature shall be determined by the planning commission of the central people's government and approved by the administrative council of the central people's government.

2. Use of land for construction of a local nature: when the land area required is over 5,000 mou or resettlement of residents involving over 300 households, approval will be granted by the administrative committee of the greater administrative district; when the land area required is less than 5,000 mou but over 1,000 mou, or resettlement of residents involves less than 300 households but over 50 households, approval will be granted by the people's government of the province or municipality (shih); when the land area expropriated is less than 1,000 mou, or resettlement of residents

involves less than 50 households, approval will be granted by the county people's government.

3. Construction of a national defence nature shall be individually determined according to the size and scale of the project by the people's revolutionary military committee, greater military district or provincial military district, and shall be submitted to the administrative council or the local people's government for approval.

Land expropriation plans submitted for approval shall explain in detail the location (to be accompanied with maps), and the amount of land required, the number of households affected, the types of agricultural crops growing on the land, and the plan for resettlement and compensation for the peasants whose land has been expropriated. The land expropriation plan shall be accompanied by the views of the local government. The approving authorities shall carefully inspect the submitted plan in accordance with the principle of thrifty use of land.

Article 5: After the land expropriation plan has been approved according to the procedures in Article 4, the unit together with the local people's government and local party committee of the CCP (some small units under the leadership of the local administration) shall explain it to the local residents and announce the various methods of compensating and resettling the peasants whose land will be expropriated. Time for consideration should be given to the people to enable them to realize for themselves that the land is being expropriated for the benefit of the state and the long term benefit of the people and that their own well-being has been appropriately looked after. Thereafter, land expropriation shall be finalized and actual construction work started. If large areas of land have to be expropriated, or large numbers of residents or even the entire village need to be resettled, preparatory work shall be done first. This would involve the convening of meetings of people's representatives to solve any problems encountered.

Article 6: Before land expropriation is finalized surveying and drilling work have to be carried out to determine the suitability of the land for certain constructional use. The construction unit shall survey the area of the land, and obtain approval from the people's government of the province, municipality and county. Thereafter, the unit, together with the people's government of the locality as the local party committee of the CCP, shall explain (the purpose of the survey work). The work may be started only after obtaining approval from the people. If damage to people's property occurs during the survey work, appropriate compensation should be given.

Article 7: In the event of rescue work or an emergency situation when there is insufficient time (for the department or unit) to acquire land through the (normal) procedure of land expropriation, work may be started. While work is in progress (the unit) shall submit a report to the local people's government and promptly apply for land expropriation.

Article 8: The compensation fund for land expropriation in villages shall be negotiated among representatives appointed by the local people's government, the unit using the land, the Peasant Alliance Association, and the original land owner or original land user. For general types of land (the amount of compensation fund) shall be set by the average value of production within the last 3 to 5 years. Special land shall be treated accordingly. If public (state owned) land is available to exchange for the land to be expropriated, subsidies shall also be provided for the transfer of peasants affected. With regard to houses, wells, trees and agricultural crops on expropriated land, the local people's government, the unit using the land, the Peasant's Alliance Association and the original owner of the land, or its original user (or the representatives appointed by the original owner or the original user) shall survey the current conditions (of the properties on the expropriated land) and make fair and rational compensation.

Article 9: With regard to expropriation of public land and state owned land in suburban areas, the peasants cultivating those lands shall be appropriately assisted in accordance with their current living conditions. All the agricultural crops on the land shall be treated in accordance with Item 2 of Article 8.

With regard to persons who operate enterprises on public land for public benefit, for their livelihood, and need to continue operations after the land has been expropriated but have no access to operating funds, the local people's government shall disburse funds according to the nature of the operating budget of the senior department of the enterprise. If disbursement is not possible, it should be reported promptly to the people's government of higher order.

Article 10: When graves need to be removed due to land expropriation, the owner of the graves should be notified beforehand. An appropriate unit for removal and reburial shall be provided and proper arrangement for reburial shall be made according to local custom. Graves without an owner shall be relocated by the unit using the land. (The unit) shall be responsible for finding land for reburial if no (proper) site is available. Graves of martyrs shall be properly relocated and a report submitted to the local county or municipal people's government. The greatest effort shall be taken to protect historic sites on expropriated land with the stipulation that their presence shall not hinder development.

Article 11: For construction projects which require land beyond the area expropriated for storing construction materials or temporary transportation purposes, (the unit) shall negotiate with the original land owner (or original land user) for temporary use of the land, or rent it on a temporary basis.

For losses incurred by construction lying on (unexpropriated) land adjacent to construction sites, the original land owner or original user shall be appropriately compensated.

Article 12: With regard to expropriated land where surveying or construction work has started, if the land is no longer being used due to some change of circumstances, or proves to be unsuitable (for a particular purpose), as indicated by the result of the survey, it shall be returned to the original land owner (or original land user). If losses have been inflicted by the survey or construction work upon the original land owner (or original land user), appropriate compensation should also be provided.

For expropriated land where construction work will not be commenced for more than one crop season, for the sake of benefitting production, and with the stipulation that development will not be hampered, the peasants shall be allowed to continue cultivation on a temporary basis.

Article 13: After the land cultivated by peasants has been expropriated, the local people's government shall be responsible for providing land to assist peasants to continue production, or assist (the peasants) to change their occupation. They must not be made homeless. Also, under permissible conditions, the units using land shall, in conjunction with the government's labour department and the trade union, absorb the peasants to participate in the work (of the units) whenever possible.

Article 14: For houses on expropriated land the original owner or his legal agent shall on producing his property deeds or certificates issued by the people's government above the hsiang level, collect compensation from the unit using the land ((the funds) may be distributed by the local people's government). During the period when the unit using the land is distributing compensation funds, if (the property owner) is not able to collect the funds because he has lost his deeds and the local people's government is not able to vouch for him, the unit using the land shall submit the funds to the local people's government for safekeeping for a period of one year. The funds may be redistributed to the original (land) owner or his legal agent within one year, or to those who produce deeds acceptable to the land office or to (those whose ownership of land) has been certified by the hsiang people's government. The local people's government shall return to the State Treasury compensation funds in its safekeeping, which have not been collected within one year.

Article 15: If all the houses (on the land expropriated) stated in the title deed are expropriated, the title deed shall be surrendered to the local people's government for cancellation when the compensation funds are collected. If only some of the houses are expropriated, the local people's government shall state in the deed the portion expropriated and return them to the (land) owner, or issue a new deed. If the remaining portion of land is small in size and the original owner does not want to use it, the land shall also be expropriated after approval has been granted by the local people's government. For land expropriation which has been approved by the people's government, in accordance with these Regulations, all fees for the transfer of title shall be exempted.

Article 16: Upon the completion of distribution of compensation, the unit using the land shall prepare two copies each of the plans of the land expropriated and submit them to the local county (municipal) people's government, to be placed on record. One of these copies shall then be retained by the unit using the land and the other retained by the county (municipal) people's government for inspection.

Article 17: When urban land is expropriated for state construction, all the houses and other (properties) pertaining to the expropriated land shall be compensated for at a fair and reasonable price according to conditions determined by the local people's government, the unit using the land and the original (land) owner and the original (land) user (or representative appointed by the original owner and user). If property ownership of the house and its foundation is held by the same person, no compensation shall be paid for the foundation; if they belong to two different persons, the owner of the foundation shall be compensated according to his living condition.

No compensation shall be paid for the expropriation of empty land within urban areas. No compensation shall be paid for the expropriation of farmland within urban areas rented out by landlords, but for peasants who rent this type of land, compensation shall be paid for the agricultural crops and other personal properties pertaining to the land in accordance with Item 2 of Article 8.

Expropriation of urban farmland cultivated by peasants shall be compensated according to regulations laid down in Article 8. After expropriation of urban farmland, the livelihood and production of peasants who had been cultivating this land or had rented this land shall be properly looked after in accordance with Article 13.

Article 18: The property ownership of all expropriated land is held by the state. Any (expropriated) land which is no longer used is not transferable, and shall be returned to the State.

Article 19: Private economic enterprises and private cultural and educational enterprises using land shall submit their application to the people's government above the provincial (municipal) level. Upon approval the land required shall be expropriated according to these Regulations by the local people's government.

Article 20: All Regulations concerning land expropriation that are (now) in effect shall be abolished after the promulgation of these (new) Regulations. All provincial (municipal) people's governments shall draw up rules for local application in accordance with these Regulations and submit them to the administrative committee of the greater administrative districts, and report them to the administrative council of the central people's government, to be placed on record.

Article 21: Within the minority autonomous regions, the state's regulations for land expropriation shall be formulated by the government of the autonomous regions, and submitted by them to the people's government above the provincial level for approval before enforcement, and reported by them to the central people's government, to be placed on record. Before the promulgation of the autonomous regions' own regulations, (land expropriation) shall be carried out in modified form, with reference to these Regulations in accordance with the ethnic customs of the locality.

Article 22: These Regulations shall be reported to the chairman of the central people's government for approval before promulgation after they have been passed at the administrative meeting. These Regulations shall take effect from the date of promulgation.

Source: Translated by the writer from Chung-hua jin-min kung-ho-kuo tu-ti-fa t'san-kao tzu-liao hui-pien (Compendium of Reference Materials on Land Regulations of the People's Republic of China), 1954-56 (Peking: Fa-lü chu-pan-she, 1956), pp. 335-440.

APPENDIX C

REGULATIONS FOR LAND EXPROPRIATION FOR STATE CONSTRUCTION

(Passed at the 192nd Meeting of Administrative Affairs of the Administrative Council on 5 November 1953)

(Approved by the Chairman of the Central People's Government and promulgated by the Administrative Council on 5 December 1953)

(Rectified at the 58th Meeting of the General Meeting of the State Council on 18 October 1957. Approved at the 90th Meeting of the Standing Committee of the People's Congress on 6 January 1958. Promulgated by the State Council on 6 January 1958)

Article 1: These Regulations are formulated to meet the needs of state construction, and to treat carefully and properly the problems of land expropriation for state construction.

Article 2: When the state builds factories and mines, railways, transportation lines, water conservation, and national defence projects or proceeds with construction of cultural, educational, health and municipal facilities, and others, it is necessary to expropriate land. Land expropriation shall be carried out in accordance with these Regulations.

Article 3: The regulations for land expropriation for state construction should not only conform to the actual needs of state construction to guarantee land required for such purposes, but should also properly look after the production and livelihood of peasants whose land has been expropriated. If for the time being those whose land has been expropriated cannot be resettled, land should not be expropriated until such problems are solved, or alternate sites should be expropriated.

Land expropriation for state construction should conform to the principles of using land thriftly. All projects which are not necessary at the present time should not be undertaken. When expropriating land for projects that are to be constructed (the construction unit should calculate meticulously (the amount of land required), strictly limit the planned amount (of land), control the density of buildings, prevent excessive or premature expropriation (of land), and eliminate waste of land. Waste land, poor land and empty land should be as fully utilized as possible. Wherever possible, cultivated land and rich farmland should not be expropriated, or not in large amounts; houses should not be demolished, or not in large numbers.

Article 4: In land expropriation, the amount of land needed (for a certain project) shall be approved by the department authorized to approve the preliminary plan of the project, then the unit using land shall apply for the land in one allotment or in several allotments from the local people's committee at the provincial level; for construction projects using less than 300 mou of land and involving resettlement of less than 30 households (the unit) shall apply for land allotment from the local people's committee at the county level.

When the unit using land applies for a land allotment (it) should submit the application forms for land expropriation ((items include) an explanation in detail of the territory, location and the approved amount, and attach (to it) plans for compensating and resettling the persons whose land has been expropriated, documents on the approved preliminary plan of the construction project (to be accompanied with plans)) documentation as to the duration of construction and the written opinion of the people's committee at the levels of county or town of the locality where the land is located. But for applications for land to be used for railway, highway and national defence projects, if there is real difficulty in submitting the above-mentioned documents (the need for) their submission may be exempted or postponed, upon the approval of the department which approved the amount of land (expropriated).

Article 5: After allotment of the land, the unit using land, together with the local people's committee, shall explain it to the people, and announce the various methods of compensating and resettling those whose land has been expropriated, and give them the necessary time to make preparations. This will enable them to realize for themselves that the land is being expropriated for the benefit of the state and the long term benefit of the people. Thereafter land expropriation shall be finalized and actual construction work started. If large areas of land have to be expropriated, large numbers of residents or even an entire village resettled, preparatory work among the local people shall be done first, and then the problems involved in land expropriation submitted to the local people's congress for solution.

Article 6: In the event of salvage work or an emergency situation, when there is insufficient time (for the unit) to apply Article 4 and Article 5 of these Regulations in expropriating the required land, work may be started. At the same time an application for land expropriation should be submitted as soon as possible and explanations given to the people (for the land expropriated).

Article 7: In case of land expropriation, arrangements should be made to use state-owned, public-owned land. If no such arrangements can be made or the production and livelihood of those whose land has been expropriated are affected after such arrngements are made, compensation or subsidies should be paid (to them).

The (amount of) compensation for land expropriation shall be jointly determined by the local people's government, the unit using the land and the person whose land has been expropriated. With regard to general types of land (the amount of compensation) shall be set by the fixed value of production of the last 2 to 4 years; with regard to tea-growing hills, tung tree-growing hills, fish ponds, lilly-root ponds, mulberry gardens, bamboo groves, orchards, reed ponds, or other types of special land, compensation shall be made in a modified form in accordance with the actual conditions.

If houses on expropriated land must be demolished, under the principle of guaranteed housing for the original households, an equivalent type of accommodation shall be provided to the original house owners, or compensation provided in accordance with the principle of fairness and rationality. (Owners of) wells, trees and agricultural crops on expropriated land shall be provided with compensation in accordance with the principle of fairness and rationality.

Article 8: Compensation of subsidy for expropriated land and compensation for houses, wells, trees and agricultural crops on expropriated land shall be paid by the unit using the land.

When land is expropriated from agricultural producer's co-operatives, compensation or subsidy shall be paid to the co-operatives; when expropriating privately-owned land, comparative fund or subsidy shall be paid to the (land) owner. (To compensate for) properties and agricultural crops on the land, which belong to the agricultural producer's co-operatives, compensation shall be paid to the co-operatives; for those that belong to the individual, to their owners.

Article 9: When land is expropriated from agricultural producer's co-operatives, if the member's general meeting or the member's congress considers that (the expropriation) does not affect the livelihood of the members, no compensation shall be necessary, and upon the approval of the local people's committee at the hsien (county) level, no compensation shall be paid.

When expropriating land that is used by the agricultural producer's co-operatives and not belonging to the members, if the land owner is not engaged in agricultural production, and does not depend on income from the land for his living, no compensation shall be paid, but approval (for expropriating the land) must be given by the individual.

Article 10: In the expropriation of houses and their foundantions within urban areas, if the house and the foundation belong to the same person, no separate compensation shall be made for the foundation; if they belong to two different persons, the owner of the foundation shall be compensated according to his living conditions.

No compensation shall be paid for the expropriation of non-productive empty land within urban areas.

Article 11: Before the unit using land proceeds with surveying and investigating the land for which it is applying for expropriation, approval must first be obtained from the local people's committee and its owner. If losses to the owner were incurred by the surveys and the investigations, appropriate compensation shall be paid.

Article 12: When a construction project is in progress, the unit using the land or the construction unit needing to use or expropriate land beyond the territory already expropriated, for storage yards, construction materials and transportation lines, after obtaining approval from the local people's committee and the land owner, may rent or borrow (the land). When losses are incurred by construction work in progress on unexpropriated land, the unit using the land or the construction unit shall compensate the land owner.

Article 13: With regard to peasants who need to be looked after as a result of land expropriation, the local people's committee at the village, town and county level shall be responsible for placing them in agriculture whenever possible; if this is not possible, the labour department, the department of civil administration and others of the local people's committee at the county level, together with the unit using land shall devise means to place the peasants in other sectors in the same locality;if it is impossible to place them in agriculture or other sectors in the same locality, emigration (of the peasants) shall be organized. Organization of emigration shall be the responsibility of the people's committees at the county level in both the emigrating district and the immigrating district. The unit using land shall be responsible for paying the expenses for emigration.

Article 14: All ownership of expropriated land is held by the state. The unit using land shall prepare two copies each of the plans of the land expropriated and submit them to the local county or the municipal people's committee to be placed on record. One of these copies shall then be retained by the county or the municipal people's government for inspection, and the other retained by the unit using land.

Article 15: With regard to expropriated land, if the land or part of the land is not used by the unit using the land due to a change of plan or other reasons, the land or the unused portion shall be returned to the local people's committee at the county level which shall allot (it) to other units using land or to the peasants for cultivation.

For expropriated land which is not used temporarily for one cropping season, the condition that the use of the land for construction is not hampered, (the land) shall be given to the peasants to continue cultivation. With regard to land on which agricultural crops are growing, whenever possible (it) shall not be used until after the harvest.

Article 16: When graves on expropriated land need to be removed, the local people's committee shall notify the owner of the grave to remove it. Appropriate amounts of funds (for removal and reburial) shall be paid by the unit using the land; proper arrangements (for the burial) shall also be made in accordance with local custom. Graves without an owner shall be relocated by the unit using the land. The local people's committee shall assist in finding land for reburial if no (suitable) site is available. The local people's committee at the county level shall be notified concerning the removal of the graves of martyrs.

If there are any archaeological remains, famous places of scenic value and historical relics that are worthy of preservation within the area expropriated, the unit using the land and the construction unit, together with the cultural department of the people's committee at the county level shall be responsible for making proper arrangement for ther preservation.

Article 17: With regard to water sources, aquaducts, transportation and other (similar facilites) which have a close relationship to production and the livelihood of the people, the unit using the land or the construction unit together with the local people's committee, shall make proper arrangement (for their protection) while the construction project is in progress. (These facilities) should not be recklessly interrupted or damaged.

Article 18: With regard to state owned and public lands that are required for state construction, (the authorities or unit concerned) shall apply for their allocation in accordance with Items 4 and 5 of these Regulations, and shall provide appropriate explanations to the people.

When alloting state owned and public land cultivated by the peasants, appropriate subsidy shall be provided by the unit using the land according to their living conditions. With regard to compensation for the properties and the agricultural crops on the land, and resettlement of the peasants who originally cultivated the land, (the unit using the land) shall separately make arrangements in accordance with Items 7 and 13 of these Regulations.

Where there are allocations of state owned, public land being used by government offices, military units, enterprises, schools, people's organizations and other units, with regard to the problems of the removal and rebuilding of houses and foundations on the land originally used by the above units, arrangements shall be negotiated among the local people's committee at the county level, the unit applying for use of the land and the unit originally using the land, with strict adherence to the principles of restricting use of land or houses and of curtailing expenditure of state revenue. Whenever possible, the unit originally using the land shall solve the problem by itself. If this cannot be done, the unit originally using the land shall make arrangements, or exchange houses (with other units); if this cannot be done, appropriate compensation shall be paid by the unit applying for use of the land.

Article 19: With regard to persons who rely on income from operating enterprises on public land for public benefit, if after this category of land is expropriated and (the operators) need to continue operation but have no access to operating funds, the local people's committee shall disburse funds, according to the nature of the enterprise, from the operating budget of the senior department of the enterprise; if disbursement is not possible, a report shall be promptly submitted to the people's committee at the senior level for solution.

Article 20: Joint state and private enterprises, co-operative trusts, supply and marketing co-operatives, handicraft producer's co-operatives and people privately operating enterprises for public benefit who require land may apply to the local people's committee at the county level. After approval arrangements shall be made in accordance with these Regulations.

Article 21: People's committees above the county level and the senior department of the unit using land shall constantly supervise and inspect the conditions of use of the expropriated land. If there are infringements of these Regulations by the unit using the land and the construction unit, including waste of land or damage to the interest of the people, these situations should be promptly corrected and responsibility for serious cases should be investigated, and treated firmly. All unused and unnecessarily expropriated land shall be promptly retrieved.

At a fixed time the people's committee above the county level shall submit reports on the conditions and problems of land expropriation.

Article 22: In accordance with these Regulations and the concrete conditions of the locality, the people's committee at the provincial level shall formulate regulations for application and report to the State Council, to be placed on record.

In accordance with the concrete conditions of the locality and with reference to the basic principles of these Regulations, the self-governing departments of all ethnic autonomous areas shall formulate regulations for land expropriation of their local districts; also a modified form of these Regulations may be applied to land expropriation (in ethnic autonomous areas).

Source: Jen-min jih-pao (People's Daily), 7 January 1958. Also appeared in Hsin-hua pan-yüeh-kan (New China Semi-monthly) no. 3, 1958, pp. 68-70. (Author's translation).

APPENDIX D

An Excerpt from the Text of "On the Ten Great Relationships".

"During the past two months the Politburo has individually heard and accepted the work reports of thiry-four economic and financial departments of the Centre. It has exchanged views with these departments on a number of issues, and after further discussions has made a synthesis containing ten problems, ten contradictions.

Raising these problems has but one aim: to mobilize all positive elements and all available forces in order to build socialism more faster, better and more economically.

It has always been our policy to mobilize all positive elements and all available forces. In the past we followed this policy in order to win victory in the People's Democratic Revolution, and to put an end to the rule of feudalism and bureaucratic capitalism. Now we follow it in a new revolution, the Socialist Revolution, and in the building of the socialist state. No matter whether it is for revolution or construction, this policy should always be followed. Everybody is clear about this. But there are some problems which are still worth discussion, among them some points which are new. Our work still has its defects and shortcomings. If we discuss these problems and consider them and handle these contradictions correctly, then we can avoid some detours.

(2) The relationship between coastal industry and industry in the interior

It is correct to develop industry in the interior. This is of primary importance. But it is necessary to look after the coastal regions.

On this question we have not made big or fundamental mistakes, yet we have a few weaknesses. In the past few years we have not laid enough stress on industry in the coastal regions. I think we should make some changes.

How much of the industry, heavy and light, which we had at the outset, was in the coastal regions, these being taken to include Liaoning, Hopei, Peking, Eastern Honan, Shantung, Anhwei, Kiangsu, Shanghai, Chekiang, Fukien, Kwangtung, Kwangsi? Seventy per cent of all our industry is in these coastal regions, and seventy per cent of our heavy industry. Only thirty per cent is in the interior. It would be quite wrong not to take account of this fact, not to give proper weight to coastal industry, and not to utilize its productive power to the full.

We must do our utmost and use all our available time to enable the industry of the coastal regions to develop. I am not saying that all our new factories should be built in the coastal regions. More than ninety per cent of them should be built in the interior. But some can be built in the coastal regions. For example, the Anshan steel mills

and the Fushun coal mines are in the coastal regions; Dairen has its shipbuilding, T'angshan has its iron and steel and building-material industries, T'angku has its chemical industry, Tientsin its iron and steel and machine industries. Shanghai has its machine and shipbuilding industries, Nanking has its chemical industry, and there is industry in many other places. Now we are planning to produce synthetic petroleum at Maoming in Kwangtung Province, where there is oil-shale. This is also heavy industry.

In future the greater part of heavy industry--ninety per cent or perhaps still more--should be set up in the interior so that industry may become evenly distributed and rationally sited over the whole country. There is no doubt at all about that. But a proportion of heavy industry must still be constructed or expanded in the coastal regions.

Our old industrial base is mainly in the coastal regions. If we do not pay attention to industry in the coastal regions this will be to our detriment. On the other hand, if we make full use of the capacity both in plant and technology of coastal industry and develop it properly, then we shall have all the more strength to develop and maintain industry in the interior. It is wrong to adopt a negative attitude towards coastal industry. This will not only hinder the full utilization of coastal industry, it will also hinder the rapid development of industry in the interior.

We all desire to develop industry in the interior. The question is only whether your desire is genuine or not. If your desire is genuine and you are not just pretending, then you must make more use of the industry of the coastal regions, and build more industry in the coastal regions, especially light industry.

In the light of available information, industrial plant can be constructed very quickly in some light industries. After going into production and developing their productive capacity they can recoup their capital outlay within one year. Hence within five years they can build three or four new factories in addition to the original one. In some cases they will be able to build two or three new factories, in other cases one new factory. This provides further demonstration of the importance of utilizing coastal industry.

In our long-term plans we have a shortage of 400,000 technical cadres. These can be provided by training workers and technicians from the coastal industries. Technical cadres do not need to come from literary families. Gorki only had two years of elementary schooling. Lu Hsün was not a university graduate. In the old society he could only be a lecturer, not a professor. Comrade Hsiao Ch'u-nü never went to school at all. You must realize that skilled workers have learned through practical experience and can make very good technical cadres.

The technical level of coastal industry is high, the quality of its products good, its costs low, and it produces many new products. Its development has a stimulating effect on the technical level and quality of national industry as a whole. We must be fully aware of the importance of this question.

In short if we do not develop light industry we cannot develop heavy industry. If we do not utilize the industry of the coastal regions we cannot establish industry in the interior. We must not simply maintain coastal industry. We must also develop it where appropriate."

Source: Schram, S.,(ed.), Mao Tse-tung Unrehearsed --Talks and Letters: 1956-1971, (Harmondsworth: Penguin Books, 1974), p.61 and pp.65-67.

APPENDIX E

Amount of Dwelling Space for Urban Housing Projects in China 1960-1964.

(square metres per person)

1	Amoy	4.57 - 5.95
2	Nanking	4.5
3	Anhwei	5.2
4	Hangchow	4 - 5
5	Shantung	4.5 - 5
6	Wuhan	4.3 - 4.65
7	Hunan	4 - 5
8	Nanning	Under 4.5
9	Kweichow	4.9
10	Sinkiang Uighur A. R.	4.74
11	Lüta	4 - 4.5
12	Heilungkiang	4 - 6
13	Tientsin	4
14	Hopeh	4.5
15	Kunming	4.28 - 4.42
16	Kansu	4.31 - 5.25
17	District of Chapeh (Shanghai)	3.46

Sources:
1-13 Chien-chu hsüeh-pao, (Journal of Architecture) no.3, 1960
14,15 _____, no. 6, 1961
16 _____, no. 7, 1961
17 _____, no. 2, 1964

APPENDIX F

I. Chinese Measures and Their Equivalents in English and Metric Systems (used in text)

Chinese Measure		English System	Metric System
Distance (Linear Measure)			
1 li	=	0.805 mile	0.5 kilometre
Area (Square Measure)			
1 mou	=	0.1647 acre	0.067 hectare or 670 square metres
1 fang-li	=	0.11 sq. mile	0.35 sq. kilometre
Weight			
1 chin	=	1.1023 pounds	0.501 kilogram
1 catty	=	1.3 pounds	0.6 kilogram
1 dan	=	110.23 pounds	50 kilograms

II. Chinese Monetary System (used in text)

10 fen	=	1 chiau
10 chiau	=	1 yüan

(1 yüan is equivalent to approximately 0.4250 U.S. dollar)

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